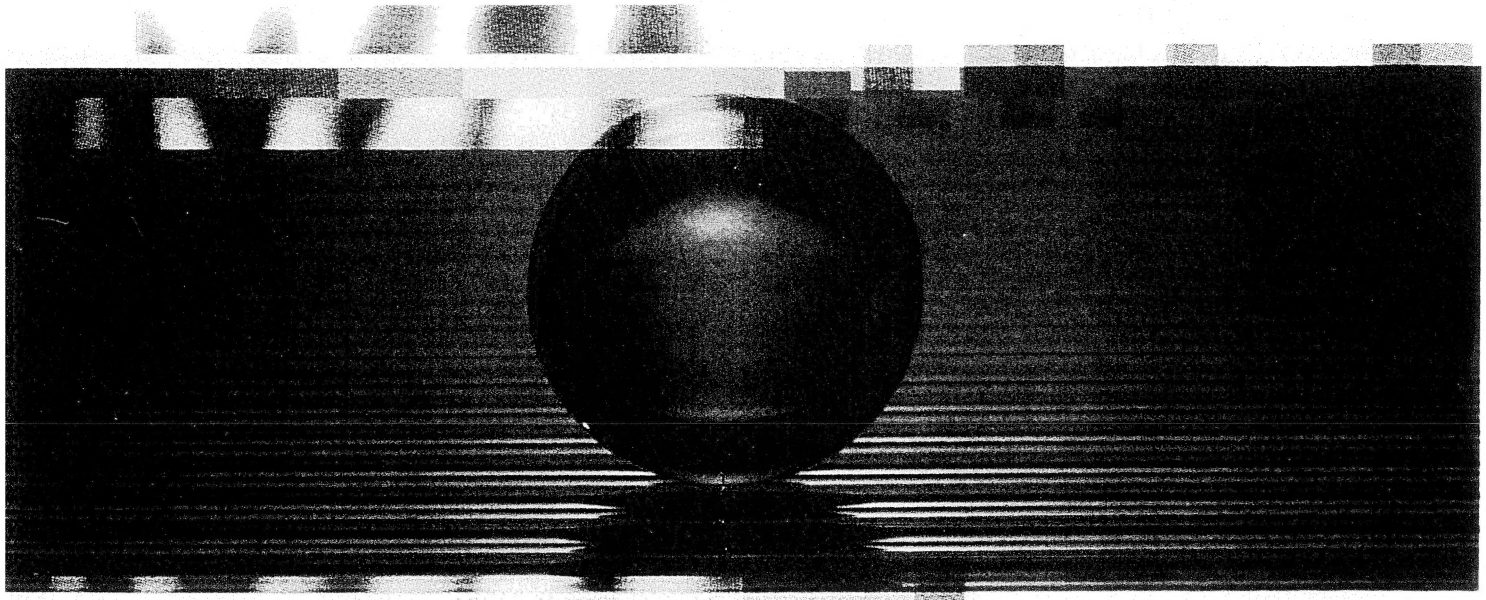
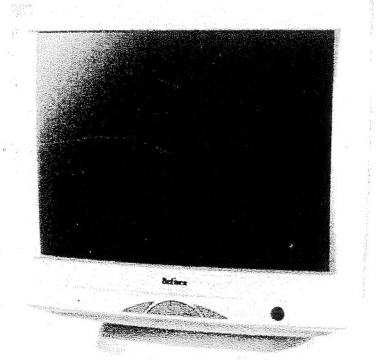
Belinea

10 30 50



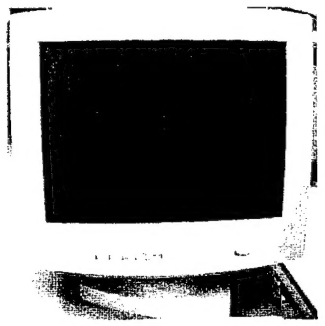


Color Monitor
Service Manual

Belinea
MONITORS BY MAXDATA

"Alle Rechte vorbehalten. Dieses Service - Handbuch darf in keiner Form (Druck, Fotokopie, Mikrofilm oder anderen Verfahren) - auch nicht in Auszügen - ohne vorherige schriftliche Genehmigung des Herstellers re - produziert oder unter Verwendung elektronischer Systeme verarbeitet, vervielfältigt oder verbreitet werden."

Service
Service
Service



EPA POLLUTION PREVENTER

DDC/Power saving/TCO
User-friendliness Control

Service Manual

Horizontal frequencies
30 - 86 kHz

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REFER TO BACK COVER FOR IMPORTANT SAFETY GUIDELINES

SAFETY NOTICE

ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE THEMSELVES WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING.

Published by BU Monitor
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Oct 15 1998

IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Electronics Company** Equipment. The service procedures recommended by and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

* * Hereafter throughout this manual, Consumer Electronics Company will be referred to as .

WARNING

Critical components having special safety characteristics are identified with a ⚠ by the Ref. No. in the parts list and enclosed within a broken line* (where several critical components are grouped in one area) along with the safety symbol ⚠ on the schematics or exploded views.

Use of substitute replacement parts which do not have the same specified safety characteristics may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from assumes no liability, express or implied, arising out of any unauthorized modification of design. Servicer assumes all liability.

* Broken Line — ▪ — ▪ — ▪

FOR PRODUCTS CONTAINING LASER :
DANGER- Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.
CAUTION- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
CAUTION- The use of optical instruments with this product will increase eye hazard.

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT,USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS,WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE MANUAL.

Specification*

(I) General :

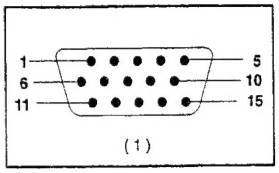
CRT

Screen size	:17 inch (43.2cm),flat & square
Focusing method	: Dynamic focus
Dot pitch	: 0.22mm
Phosphor	: P22 or equivalent, medium short persistence
Screen treatment	:Anti-glare, anti-static
Display area	
Factory preset	: 306 mm (H) x 230 mm (V)
Maximum usable	: 326.2 mm (H) x 243.6 mm (V)
Scanning frequency	
Horizontal (line)	: 30 - 86 KHz (Auto Scan)
Vertical (frame)	: 50 - 160 Hz (Auto Scan)
Input power	: 100 - 240 VAC; 50-60Hz
Power consumption	: 85 watt**
Input signal	
Video	: 0.7 Vp-p , 75 Ohm impedance
Sync	: . Separate sync.TTL level . Composite sync. TTL level
Pedestal	
Tilt	: 5 · forward, 10 · backward
Swive	: 90 · leftward, 90 · rightward
Physical	
Unit dimension (WxHxD)	: 411 x 439 x 380 (mm)
Net weight	: 14 Kg
Operating condition	
Temperature	: 0 °C - 40 °C
Humidety	: 10 % - 90 %
Storage condition	
Temperature	: - 25 °C - 65 °C
Humidity	: 10 % - 90 %
Mains cord	: Non-shield
White Color Coordinates :	
9300 °K	x = 0.281 y = 0.311
6500 k	x = 0.313 y = 0.329

* Because of a policy of continuous product improvement, the above specifications are subjected to change without notice.

**At max resolution, preset size, 9300k, brightness center, contrast max, full white pattern.

(II) Pin assignment :



The 15-pin D-sub connector(male) of the signal cable (IBM systems) :

Pin No.	Assignment	Pin No.	Assignment
1	Red video input	9	No pin
2	Green video input	10	Logic ground
3	Blue video input	11	Identification output - Connected to pin 10
4	Identification output - Connected to pin 10	12	Serial data line(SDA)
5	Ground	13	H.Sync /H+V
6	Red video ground	14	V.Sync(VCLK for DDC)
7	Green video ground	15	Data clock line(SCL)
8	Blue video ground		

Introduction

The colour monitor displays sharp and brilliant images of text and graphics with a maximum resolution up to 1280x1024 pixels.
It is optimal for Windows, CAD / CAM/ CAE, desktop publishing,spread sheets,multi-media, and any other application which demands large screen size and high resolutions.
This monitor automatically scans horizontal frequencies from 30KHz to 86KHz, and vertical frequencies from 50Hz to 160Hz. With micrprocessor based digital controlled circuit, the monitor can automatically adjust itself to the video card's scanning frequency and displays an image with precise parameters you desire The wide range of scanning frequency supports variety of operating platforms, such as IBM PC and compatibles, Apple's Macintosh, Quadra and Centris families, Power PC and workstations.

Feature Highlights

- **On-Screen-Display** function provides more infornmations when the user operates the control functions. This feature provides userfriendliness and ease-of-use when operating the monitor.
- **Anti-Glare** and **Anti-Static** screen coating eliminate any bad effects caused by the screen surface such as reflection of the room light and dust attraction.
- With **Color Adjustment** function you can easily choose different preset color temperatures or set your own customized color parameters.
- **Lamge Tilt Adjustment** function provdes correction of rotated image. This correction can minimize the distortions caused by outside environments, such as earth magnetic field.
- **Green Design** including automatic power saving function (NUTEK) and low emission TCO'95 (MPRII for 17B2405E) compliance shows our commitment in environmental care.
- **DDC1/DDC2B** allows communication between the monitor and PC system for optimal video configuration.
- **CusoMax** allows user to adjust the video, screen geometry, colour quality, image quality and hardware and software setting through USB upstream port in the rear of monitor.
- **Short length tube** allows the depth of this 17" monitor is the same as it of 14" monitor.

Note: If you exeperienced tour display is changing from color to mono, it's possible are using a non-VESA-DDC-standard video card.Please consult with your local dealer for more information.

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As an ENERGY STAR Partner, has determined that this product meets the ENERGY STAR guidlines for energy efficiency. IBM, IBM PC and Power PC are registered trademarks of International Business Machines Corporation.
Apple, Macintosh, Quadra and Centris are registered trademarks of Apple Computer, Inc.

Safety precautions and maintenance

- Disconnect the monitor from the mains supply if the monitor is not to be used for an extended period of time.
- Do not attempt to remove the back cover, as you will be exposed to a shock hazard. The back cover should only be removed by qualified service personnel.
- Do not place objects on top of the monitor cabinet, which could fall into vents or which could cover them and prevent proper cooling of the monitor's electronic devices.
  Do not expose the monitor to rain or excessive moisture to avoid the risk of shock or permanent damage to the set.
- Do not use alcohol or ammonia based liquid to clean the monitor. If necssary, clean with a slightly damp cloth. Disconnect the monitor from the mains supply before cleaning.
- Consult a service technician if the monitor does not operate normally when operating instructions of this manual are followed.

Package

Your package includes the following items:

- The monitor (integrated with tilt / swivel pedestal)
- Power cord
- Interface cable (flying-in)
- CustoMax CD-ROM (containing information file Windows '95/ '98 driver)
- USB cable

;nd of life disposal

our new set contains materials which can be recycled nd reused.
pecialized companies can recycle your product to ıcrease the amount of reusable materials and to ıinimize the amount of materials to be disposed of.

lease inform yourself on local regulations on isposal of your old set.

ıstallation

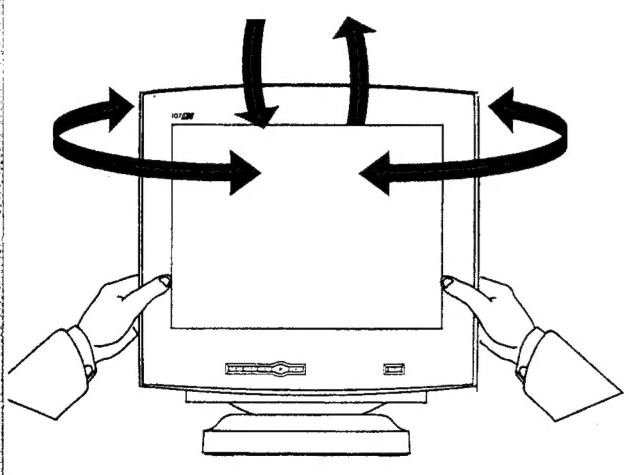
nportant : Please refer to the user's manuals of your omputer and video adapter to make sure these quipments are properly installed and configured efore installing the monitor.

ositioning / Ventilation

- Avoid exposing the monitor to direct sunlight, stoves or any other heat sources.
- To prevent overheating, make sure that the ventilation openings of the monitor are not covered.
- Keep moisture and dust away.
- Keep away from any magnetic objects, such as speakers, electric motors, transformers,...etc.
- When positioning this monitor, make sure that mains plug and socket are easily accessible.

edestal

'ith the built-in pedestal you can tilt and / or swivel the onitor for a most comfortable viewing angle.

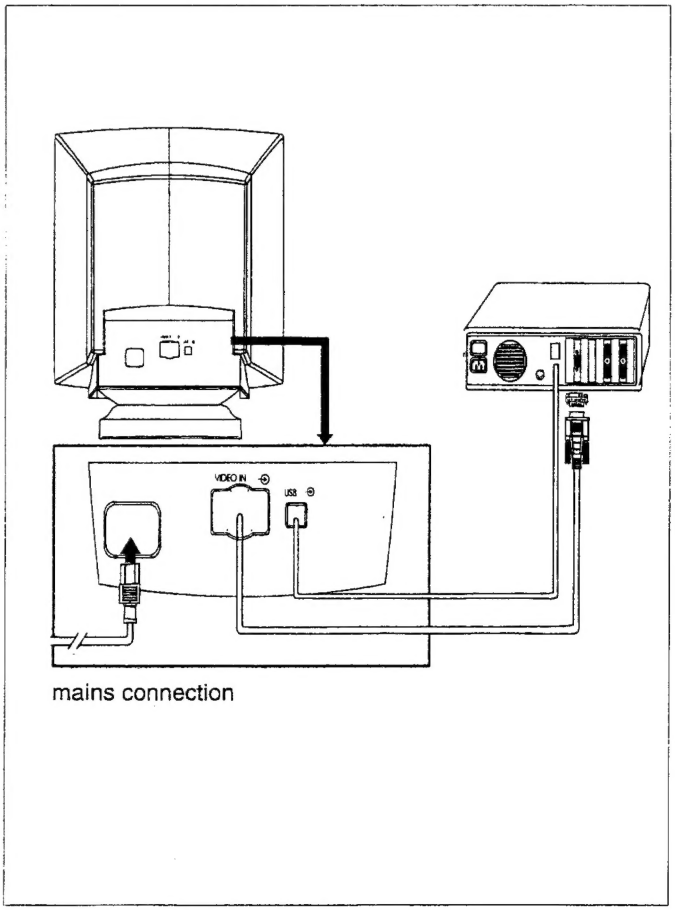


Connection

Important : Please make sure the AC power to your computer is "OFF" before connecting or disconnecting any display peripheral. Failure to do so may cause serious personal injury as well as permanent damage to your computer equipments.

- Connect the monitor to the computer using the supplied interface cables. Connection with computer system other than IBM PC may need different type of adapters.Connect the power cord to wall outlet after the intrtface cable is properly connected.

Monitor rear view



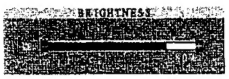
mains connection

OSD Adjustment

Adjustment via On-Screen -Display

Brightness / Contrast / Volume

adjustment of brightness,contrast & volume



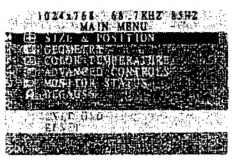
- Press ☼ , then press " + " or " - " button to adjust.
- The adjusted parameters are automatically saved and the OSD menu will disappear within 5 seconds if there is not any adjustment/action has been made.

- Press ◑ , then press " + " or " - " button to adjust.
- The adjusted parameters are automatically saved and the OSD menu will disappear within 5 seconds if there is not any adjustment/action has been made.

SIZE & POSITION

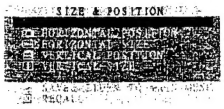
Adjustments of zoom,horizontal position,horizontal size, vertical position, vertical size :

main menu



- Press ▣ , toaccess OSD menu.
- press " + " or " - "button. to move the bar to " SIZE & POSITION".
- Press ▣ , to access the 2nd lelel menu. press " + " or " - "button to select the function you want to adjust.

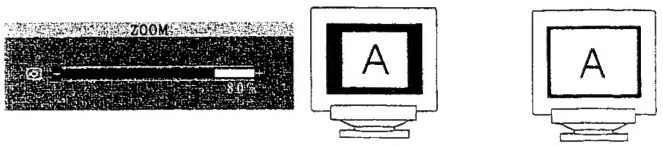
2nd level menu



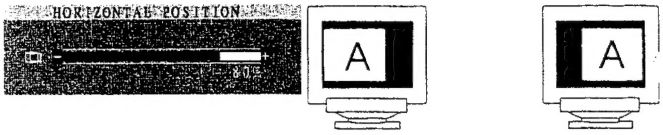
- Press ▣ , then press " + " or " - " button to adjust.
- Press ▣ , return to 2nd level menu.
- The adjusted parameters are automatically saved and the OSD menu will disappear within the time you selected on OSD TIMER(e.g.10 seconds) if there is not any adjustment / action has been made.
- Press ▣ , return to the OSD main menu.

SIZE & POSITION 3rd level menu

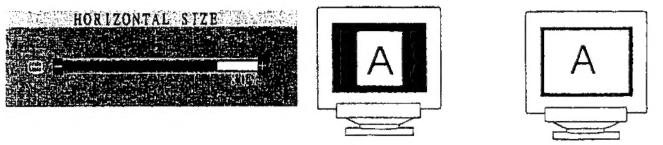
ZOOM



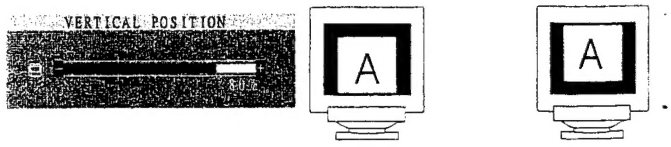
HORIZONTAL POSITION



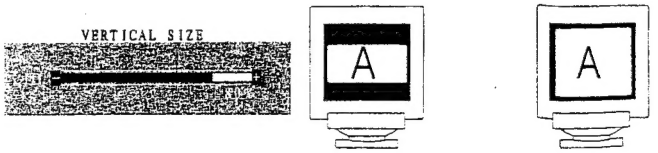
HORIZONTAL SIZE



VERTICAL POSITION



VERTICAL SIZE

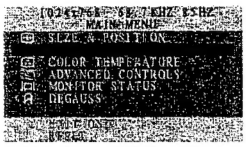


OSD Adjustment

GEOMETRY

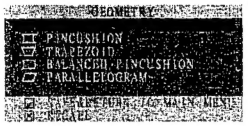
adjustment of rotation, pincushion, trapezoid, balanced, pincushion, parallelogram :

main menu



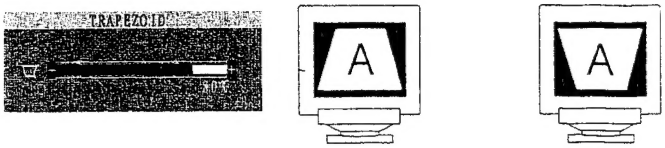
- Press ▣ , to access OSD menu. Press " + " or " - " button to move the bar to "GEOMETRY".
- Press ▣ , to access the 2nd level menu.Use OSD rotatry encoder to select the function you want to adjust.
- Press ▣ , then Press " + " or " - " button to adjust

2nd level menu

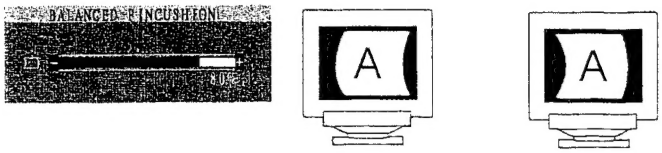


- Press ▣ , return to 2nd level menu.
- The adjusted parameters are automatically saved and the OSD menu will disappear within the time you selected on OSD TIMER (e.g. 10 seconds) if there is not any adjustment/action has been made.
- Press ▣ , return to the OSD main menu.

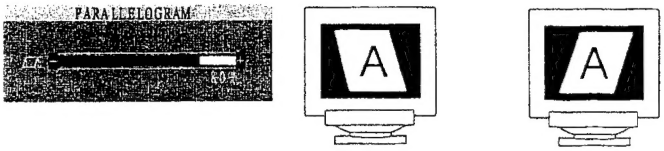
(3) TRAPEZOID



(4) BALANCED PINCUSHION

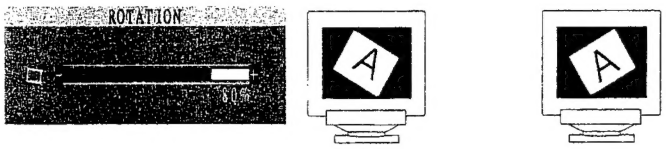


(5) PARALLELOGRAM

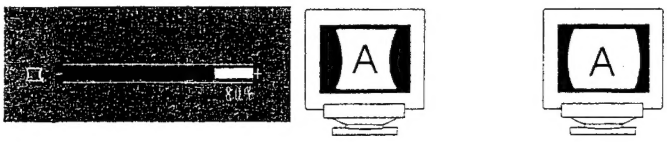


GEOMETRY 3rd level menu

(1) ROTATION

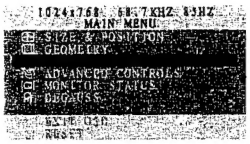


(2) PINCUSHION



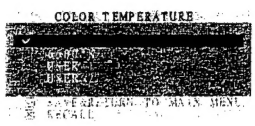
COLOR TEMPERATURE

main menu



- Press ▣ , toaccess OSD menu Press " + " or " - " button to move the bar to " COLOR TEMPERATURE".
- Press ▣ , to access the 2nd level menu. Press " + " or " - " button to select the function you want to adjust.
- Press ▣ , the screen will show the color you selected(9300 Kor 6500 K) or Press " + " or " - " button to adjust you own.

2nd level menu

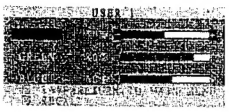


- The adjusted paramenters are automatically saved and the OSD menu will disappear within 10 seconds if there is not any adjustment / action has been made.
- Press ▣ , return to the OSD main menu.

OSD Adjustment

COLOR TEMPERATURE 3rd level menu

(1) USER 1



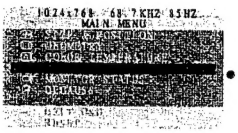
- Press " + " or " - " button to the function you need, then press and press " + " or " - " button to adjust it.
- Press ▣ , and press " + " or " - " button to choose "SAVE & RETURN TO MAIN MENU" or "RECALL".

(2) USER 2

- Press " + " or " - " button to the function you need, then press and press " + " or " - " button to adjust it.
- Press ▣ and press " + " or " - " button to choose "SAVE & RETURN TO MAIN MENU" or "RECALL".

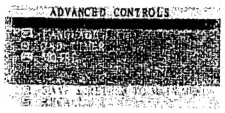
ADVANCED CONTROLS

main menu



- Press ▣ , to access OSD menu.
- Use OSD rotatry encoder to move the bar to "ADVANCED CONTROLS".
- Press to access the 2nd level menu. Use OSD rotary encoder to select the function you want to adjust.

2nd level menu



- Press ▣ , return to 2nd level menu.
- The adjusted parameters are automatically saved and the OSD menu will disappe - within the you selected on OSD TIMER(e.g.10 seconds) if there is not been made.
- Press ▣ , return to the OSD main menu.

ADVANCED CONTROLS 3rd level menu

(1) LANGUAGE

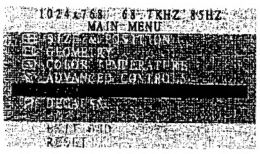
(2) OSD TIMER

(3)MOIRE

- Press " + " or " - " button to choose "H "or "V".
- Press ▣ then press " + " or " - " button to adjust.
- Press ▣ and press " + " or " - " button to choose "SAVE & RETURN TO MAIN MENU" or "RECALL".

MONITOR STATUS

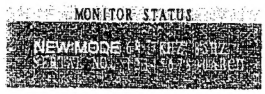
main menu



- Press ▣ , to access OSD main menu.
- Use OSD rotary encoder to move the bar to "MONITOR STATUS".
- Press ▣ , to access the 2nd level menu.0

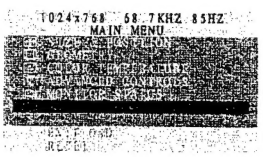
2nd level menu

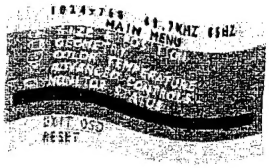
2nd level menu



DEGAUSS

main menu

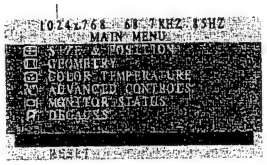




OSD Adjustment

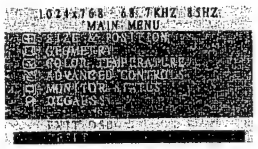
EXIT OSD

main menu



RESET

main menu



- Press ▣ , to access main menu.
- Press " + " or " - " button to move the bar to "RESET".
- Press ▣ to access the 2nd level menu. At this moment, it shows preset parameters status on the screen and you can select "NO' to go back to the previous setting or"YES" to reset all settings.

2nd level menu

- If there is no action made, then OSD menu will disappear within the time you selected on OSD TIMER (e.g. 10 seconds) and the parameters will return to the previous setting.

How if you get lost in OSD tree stucture?

You can press ▣ to go back to OSD main menu and select "RESET" in main menu to reset all settings.

Data Storage

(A) Factory preset mode:
This monitor has 9 factory-preset modes as indecated in the follwing table :

	Mode	Resolution	Frequen		Sync polarity	
			H(KHz)	V(Hz)	H	H
M01	VGA	640 x 400	31.5	70	-	+
M02	VGA	640 x 480	31.5	60	-	-
M03	VGA	640 x 480	43.3	85	-	-
M04	SVGA	800 x 600	46.9	75	+	+
M05	SVGA	800 x 600	53.7	85	+	+
M06	EVGA	1024 x 768	60.0	75	+	+
M07	EVGA	1024 x 768	68.7	85	+	+
M08		1280 x 1024	80.0	75	+	+
M09		1280 x 960	85.9	85	+	+

(B) Use mode
In addition to factory preset modes, the monitor can also provides additional 9 User-defined modes.
If the input video signal is different from our factory-preset modes, the new timing data will be automatically stored. However, the displayed parameters may need to be adjusted. User can adjust the parameters via OSD, as preceding procedures which already described on "Adjustment via On-Screen-Display" swction.

(C) New mode
The monitor is reversed for 4 new modes in case non-standard video modes are used.

Automatic Power Saving

If you have VESA's DPMS compliance display card or software installed in your PC,the monitor can automaticlly reduce is power consumption when not in use. And if an input from keyboard, mouse or orher input devices os detected, the monitor will automatically "wake up". The following table shows the power consumption and signalling of this automatic power saving feature :

Power Management Definition						
VESA's mode	VIDEO	H-SYNC	V-SYNC	POWER USED	POWER SAVING(%)	LED COLOR
ON	Active	Yes	Yes	< 100 W	0 %	Active
Stand-by	Blanked	No	Yes	< 15 W	> 85 %	Active
Suspend	Blanked	Yes	No	< 15 W	> 85 %	Active
OFF	Blanked	No	No	< 5 W	> 95 %	Active

This monitor is Energy Star compliant and TCO'92 power management compatible.

AS AN ENERGY STAR PARTNER, HAS DETERMINED THAT THIS PRODUCT MEETS THE ENERGY STAR GUIDELINES FOR ENETGY EFFICIENCY.

Warning and notes

1. Safety Instructions for Repairs

1.1 Safety regulations require that during a repair:

- The set should be connected to the mains via an isolating transformer.
- Safety components, indicated by the symbol ⚠ , should be replaced by components identical to the original ones.
- When replacing the CRT, safety goggles must be worn.

1.2 Safety regulations require also that after a repair:

- The set should be returned in its original condition.
- The cabinet should be checked for defects to avoid touching, by the customer, of inner parts.
- The insulation of the mains lead should be checked for external damage.
- The mains lead strain relief should be checked on its function.
- The cableform and EHT cable are routed correctly and fixed with the mounted cable clamps in order to avoid touching of the CRT, hot components or heat sinks.

* Thermally loaded solder joints should be checked and resoldered where necessary. This includes components like LOT, the line output transistor, fly-back capacitor.

2. Maintenance Instructions

It is recommended to have a maintenance inspection carried out periodically by a qualified service employee. The interval depends on the usage conditions.

- During the maintenance inspection the above mentioned "safety instructions for repair" should be carried out The power supply and deflection circuitry on the chassis, the CRT panel and the neck of the CRT should be cleaned.

When cleaning the monitor on the outside:
- Always disconnect the monitor from the mains.
- Always use a damp AND NOT WET lint-free cloth.
- To clean the screen, apply a household glass cleaner to a cloth and then wipe the screen.
- Do not use solvents or abrasives on the monitor. It might discolour the cabinet and/or affect the anti glare treatment on your screen.

3. Warnings

3.1 In order to prevent damage to ICs and transistors, all high-voltage flash-overs must be avoided. In order to prevent damage to the picture tube, the method shown in Fig 3.1 should be used to discharge the picture tube. Use a high-voltage probe and a multimeter (position DC-V). Discharge until the meter reading is 0V (after approx 30s).

3. 2 ESD ⚠

All ICs and many other semiconductors are sensitive to electrostatic discharges (ESD). Careless handling during repair can drastically shorten the life. Make sure that during repair you are connected by a pulse band with resistance to the same potential as the earth of the unit. Keep components and tools also at this same potential.

3.3 Be careful when taking measurements in the high-voltage section and on the picture tube panel.

3.4 Never replace modules or other components while the unit is switched on.

3.5 When making settings, use plastic rather than metal tools. This will prevent any short-circuit and the danger of a circuit becomes unstable.

3.6 After repair the wiring should be fastened once more in the cable clamps for this purpose.

3.7 Together with the deflection unit the picture tube is used as an integrated unit. Adjustment of this unit during repair is therefore not recommended.

4. Notes

The semiconductors indicated in the circuit diagram(s) and in the parts lists are completely interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.

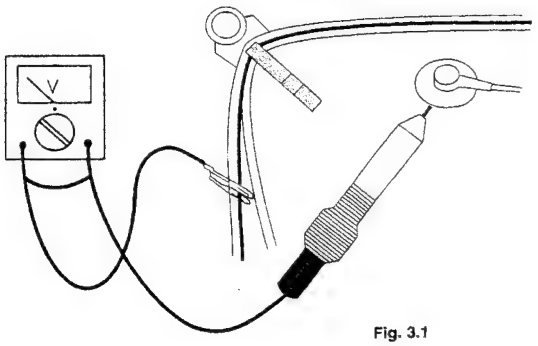
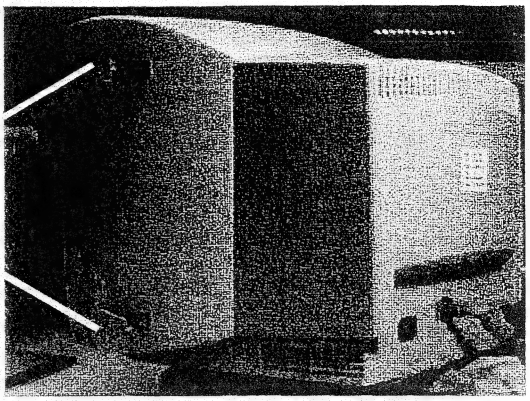


Fig. 3.1

Mechanical Instructions

0. General
To be able to perform measurements and repairs on the "circuit boards", these unit should placed in the service position first.

1.Remove the rear cover
-Open 4 lids with "-" type screwdriver.
-Remove 4 screws and 2 screws at the bottom cabinet with "+" type screwdriver,refer fiig 2, fig 3,fig 4.
-Remove 6 screws and put off metal shield cut off i cable tie and remove 5 screws for removing bottom shield of main board.
-



2. Video panel
a.Cutoff 2 cable ties
b.Remove GRD wire between video shield and CRT rack.
c.Remove 1 screw between mains board rack and video shield
d. cutoff 1 cable tie on LOT wire
e.Remove GRD wire (1703)from video PCB to CRT rack.

3. Main panel
- Disconnect the degaussing coil (1112)from Main panel.
- Remove the video panel from CRT.
- Remove the "screw" of I/F cable from Main panel.
- Disconnect the CRT ground "M312" from Video panel.
- Disconnect the Hi-Pot cap from CRT.
- Disconnect yoke wire from "M401".
- Disconnect concellation connector(1603).
- Slide the main panel out of bottom tray.
- Connect yoke wire to "M401".
- Connect concellation connector(1603).".
- Place Main panel in service position as shown in Fig.1.
- Mount Video panel again on CRT.
- To connect Hi-Pot cap again.
- To connect "M312" again.

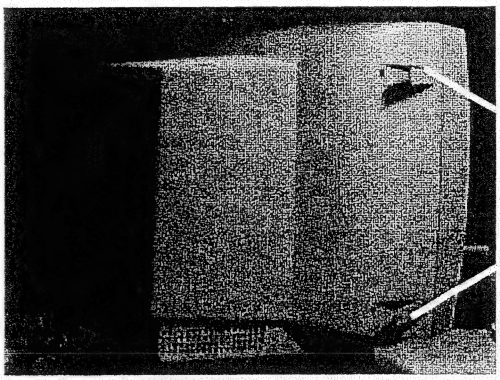


Fig.2

4. service position

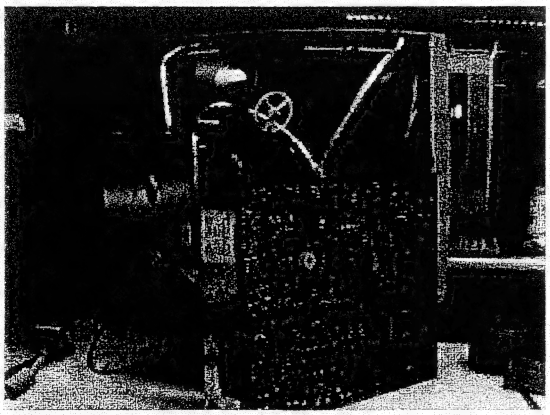


Fig.1

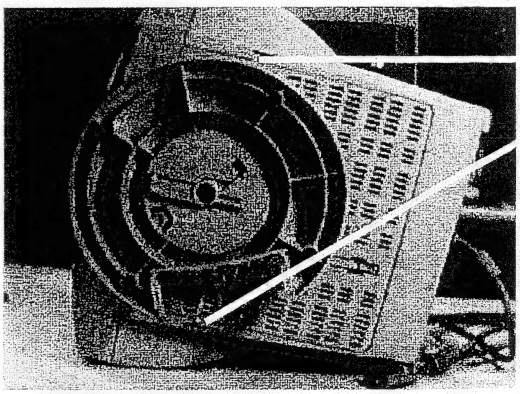
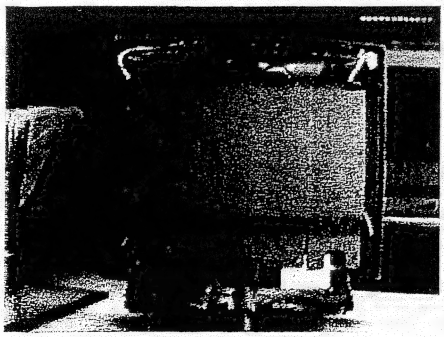
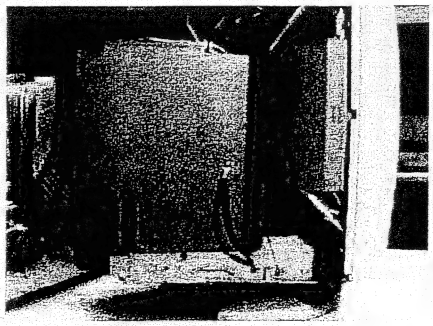


Fig.3





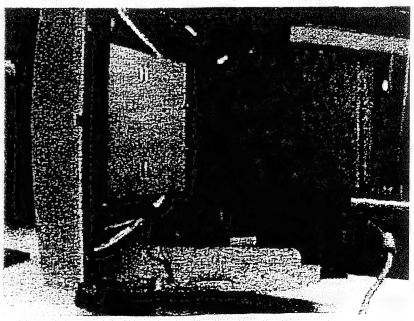
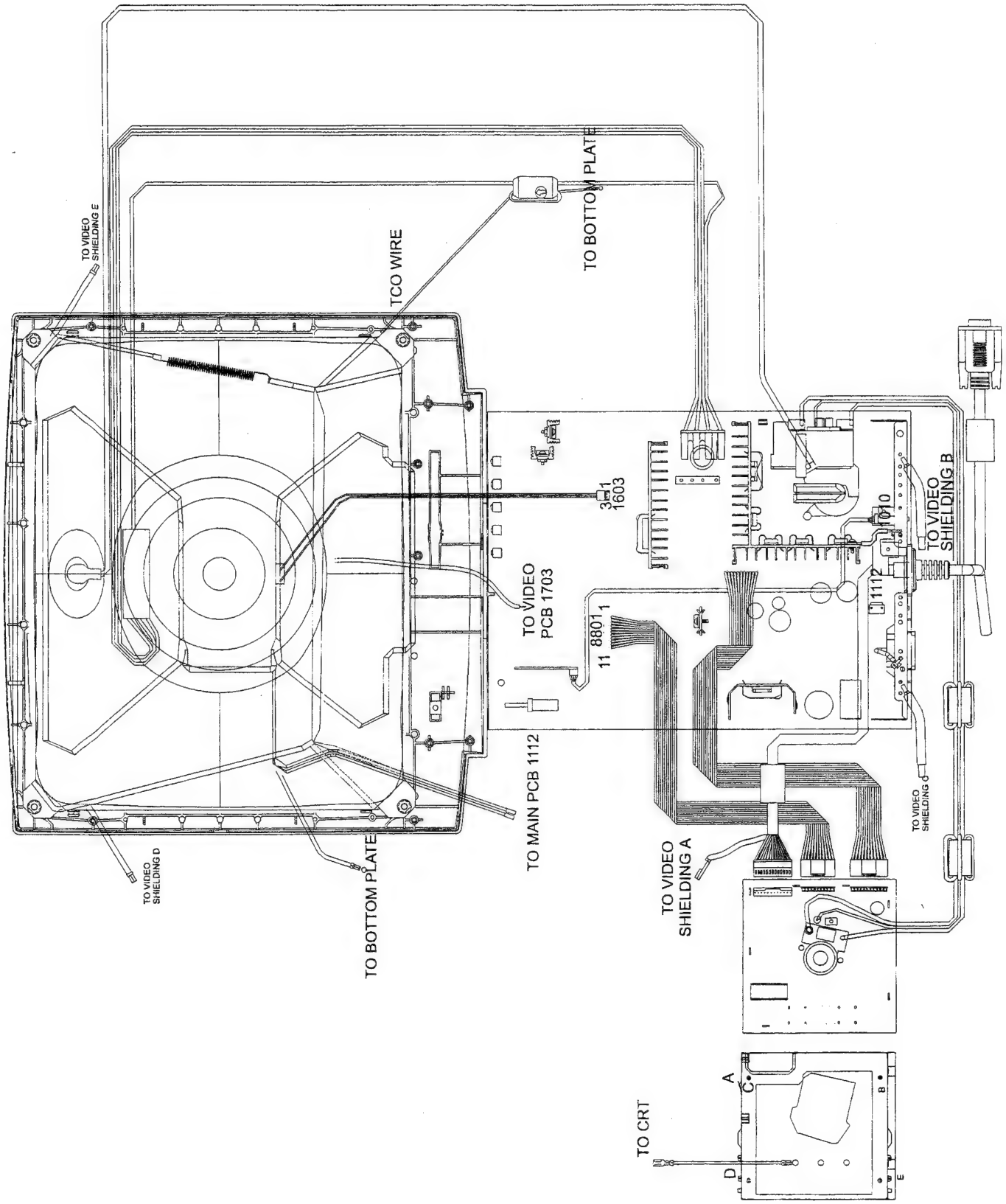


Fig.3

Wiring Diagram



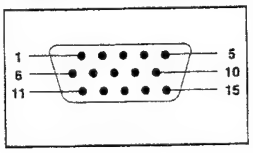
DDC Instructions

This [DDC Module (DDC cable)= 4822 320 12004(=4822 724 27550)] and
[DDC V2(DDCV2N.EXE) software(3.5" disk)=4822 711 00024(= 4822 724 27560)]
are used for "BU Monitor - Chungli product range" which incorporates a DDC1/DDC2B function that allows bi-directional communication between the monitor and PC system for optimal video configuration.
[July 01 1997, Revision 2.0] ,which upgrades the software and service information(4822 727 21027 & 4822 727 21038) , is fully compatible with previous one.

Additional information :
Additional information about DDC (Display Data Channel) may be obtained from Video Electronics Standards Association (VESA). Extended Display Identification (EDID) information may be also be obtained from VESA.

Pin assignment

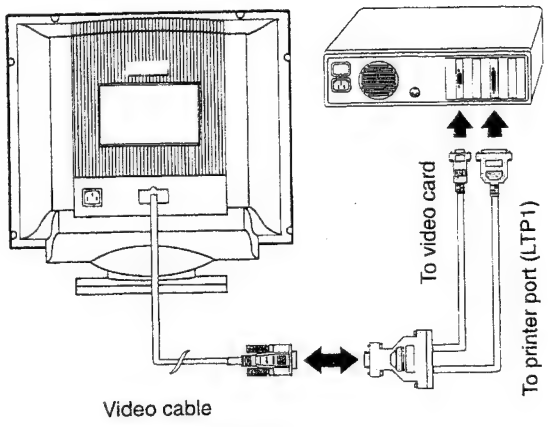
The 15-pin D-sub connector (male) of the signal cable (3 rows) for DDC feature :



Pin No.	Assignment	Pin No.	Assignment
1	Red video input	9	No pin
2	Green video input	10	Logic ground
3	Blue video input	11	Identical output connected to pin 10
4	Identical output connected to pin 10	12	Serial data line (SDA)
5	Ground	13	H.sync
6	Red video ground	14	V. sync (VCLK for DDC)
7	Green video ground		
8	Blue video ground	15	Data clock (SCL)

Connection

(Rear of the monitor)



Video cable

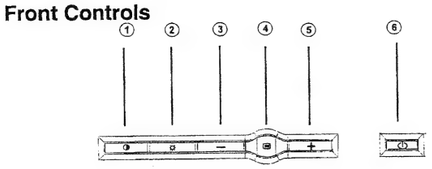
DDC data re-programming

1. General
In case the DDC data memory IC, replaced due to a defect the data contents of this IC have to be re- programmed via a PC.
In case of replacement of the video (or deflection) board it is advised to re-soldered DDC IC from the old board onto the new board, in this case the IC dose not need to be re-programmed.

2. DDCV2N.EXE can be used for :
EDID Structure Version/Revision

Version	: 1	
Revision	: 0	(text file)
and		
Version	: 1	
Revision	: 1	(.hex file)

Front Controls

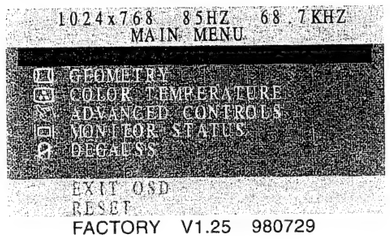


Descriptions of knobs and keypads on front control panel

① ◑ • To adjust contrast of the display.
② ☼ • To adjust brightness of the display.
③ – • To adjust the OSD
④ ▣ • To access OSD menu.
⑤ + • To adjust the OSD
⑥ ⏻ • To switch monitor's power ON and OFF.

To access factory mode:

- Turn off monitor (don't turn off PC)
- Press " ☼ " and " ◑ " and "power knob of Monitor" simultaneously, then press " ⏻ ".wait till pattern comes on the screen of monitor.
- After that, press " ▣ " , the OSD main menu with characters "FACTORY MODE"(below OSD menu) come on the screen as below.



To leave factory mode:

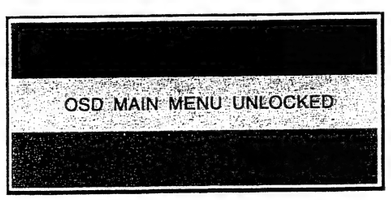
- Turn off monitor (don't turn off PC)
- Turn on monitor (don't turn off PC)
- Then return to user mode

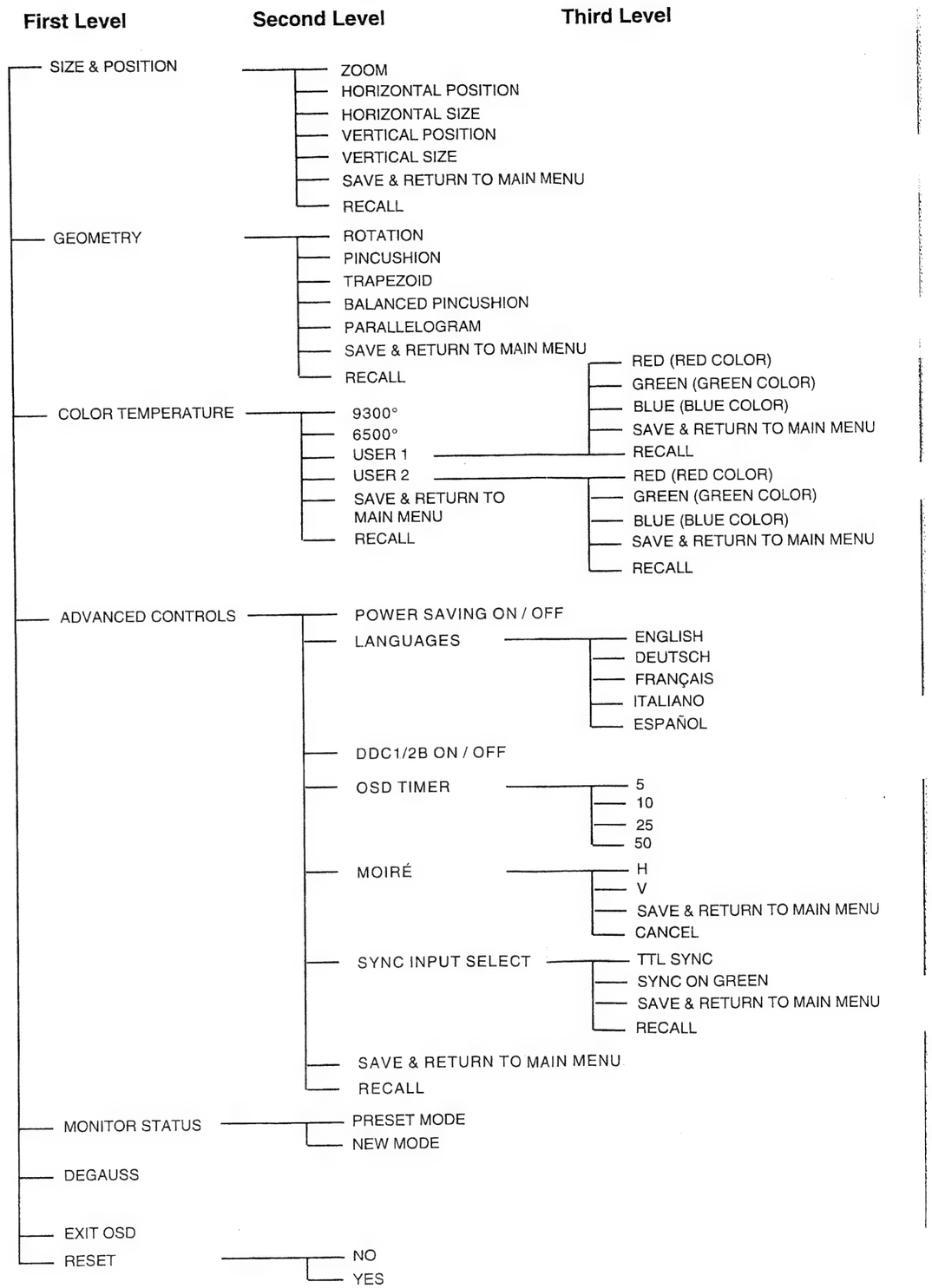
To lock (disable) OSD function:

- Press " ▣ " for 10 seconds to lock the OSD function. OSD comes on the screen as below.

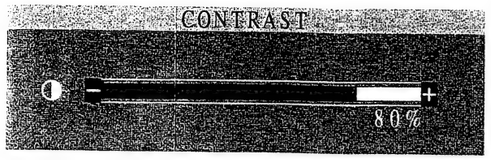
To unlock (enable) OSD function:

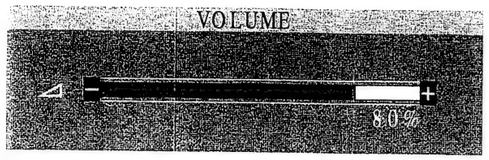
- Press " ▣ " for 10 seconds again to unlock the OSD function. OSD comes on the screen as below.

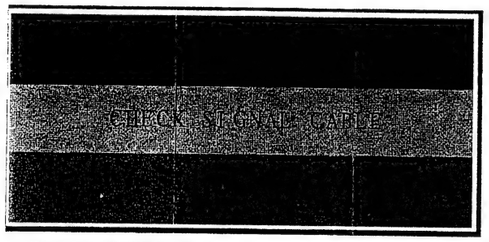




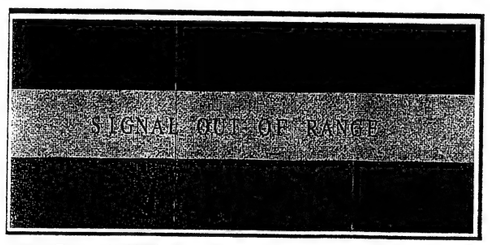
Quick Reference for OSD Adjustment



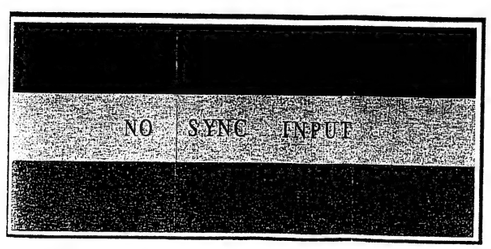




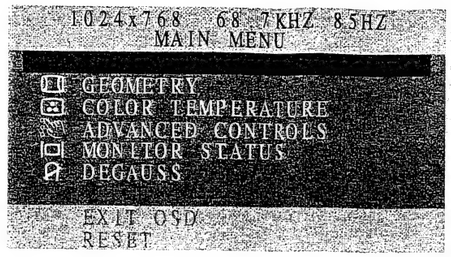
Remark: (SELF TEST : for the pin 5 of Interface cable)

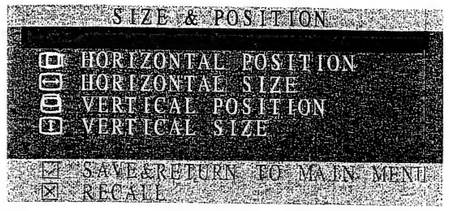


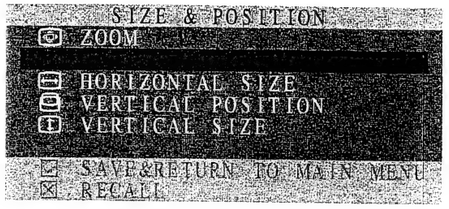
Remark: Horizontal Frequency out of range

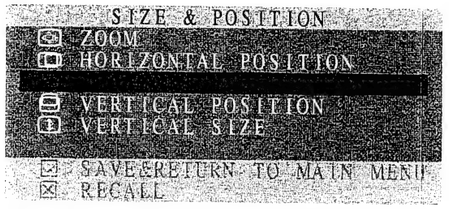


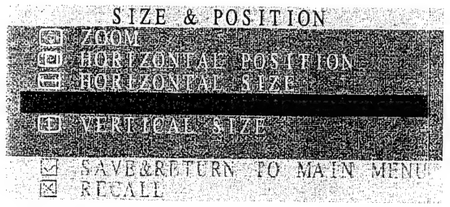
Remark: 1. Interface cable do not connect to computer when power on.
2. Interface cable without pin5 & there is no sync. input,
or interface cable disconnect.

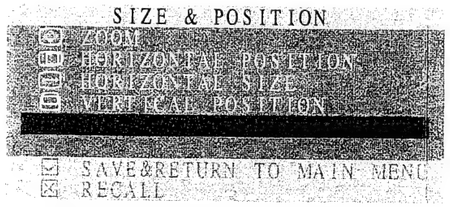


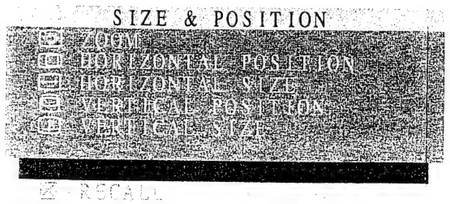


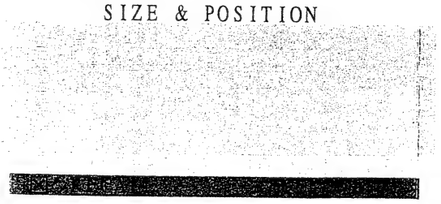


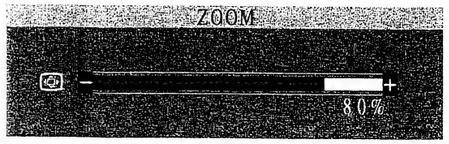


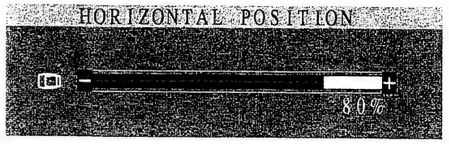


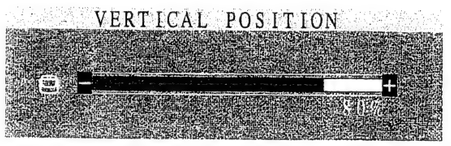


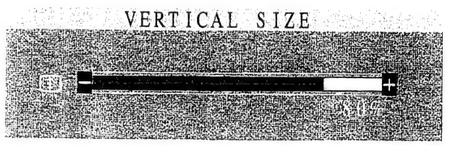




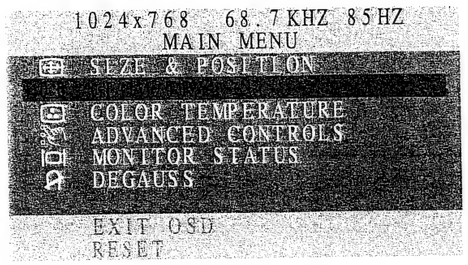


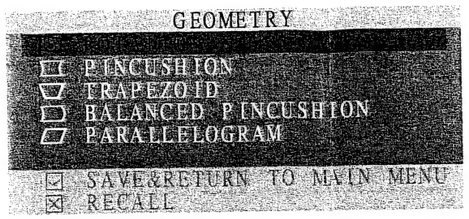


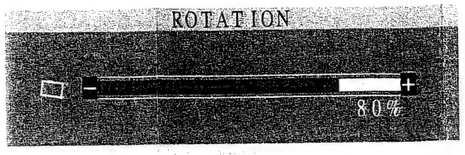


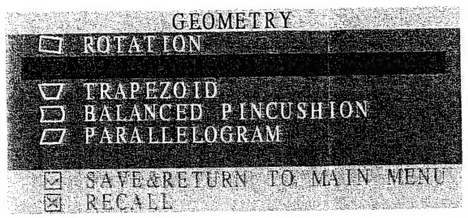


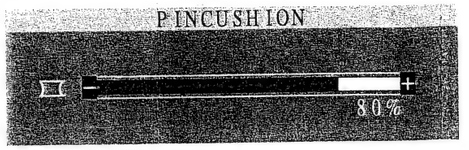
Quick Reference for OSD Adjustment (Continued)

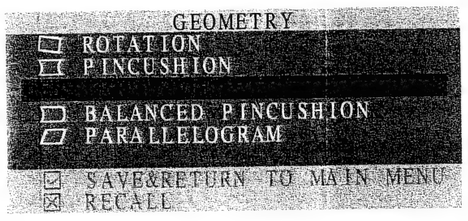


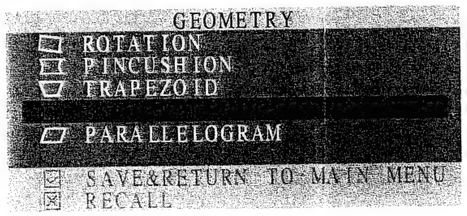


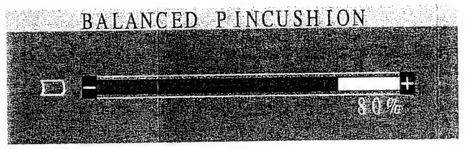


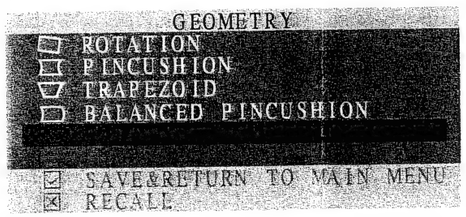


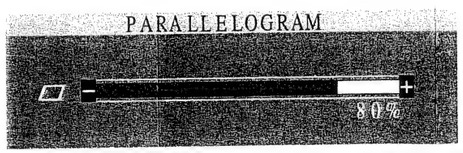


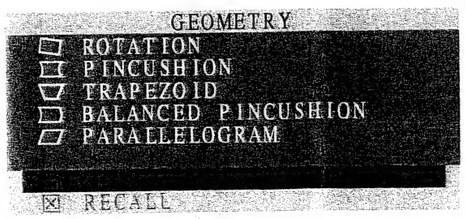


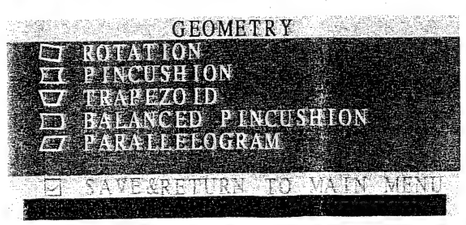


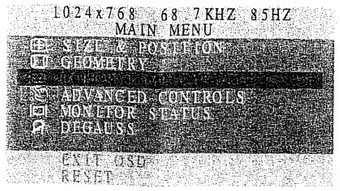








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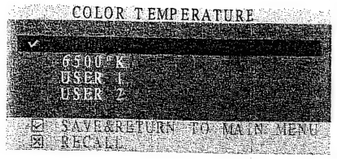
MAIN MENU
SIZE & POSITION
GEOMETRY
ADVANCED CONTROLS
MONITOR STATUS
DEGAUSS
EXIT OSD
RESET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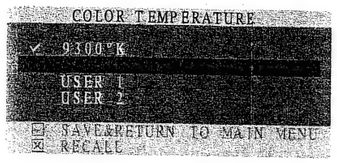
USER 1
USER 2
SAVE&RETURN TO MAIN MENU
RECALL


COLOR TEMPERATURE
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USER 1
USER 2
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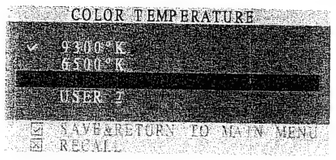
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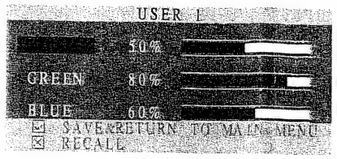
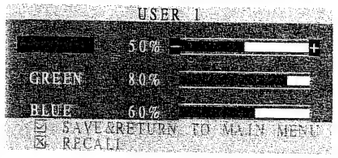

USER 1
50%
GREEN 80%
BLUE 60%
SAVE&RETURN TO MAIN MENU
RECALL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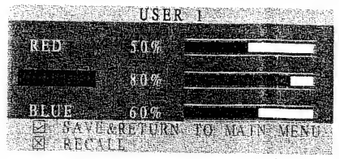
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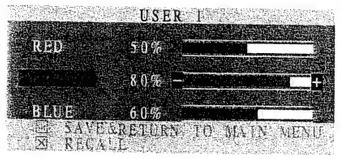
USER 1
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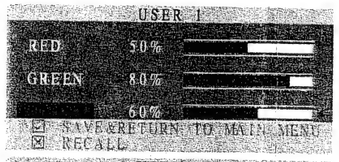
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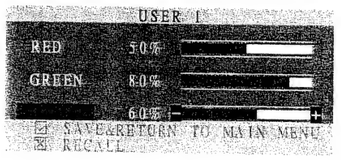
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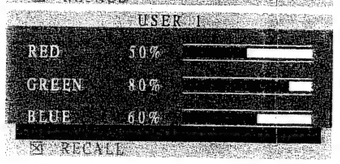
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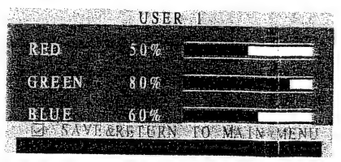
USER 1
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GREEN 80%
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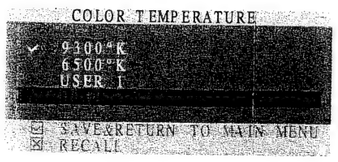
SAVE&RETURN TO MAIN MENU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USER 1
SAVE&RETURN TO MAIN MENU
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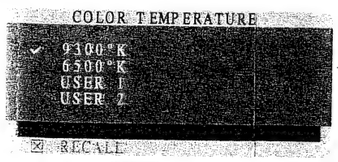
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USER 1
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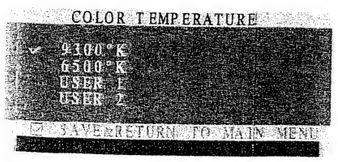
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USER 1
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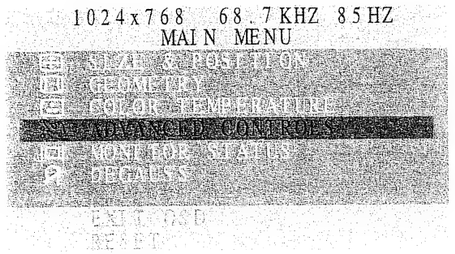
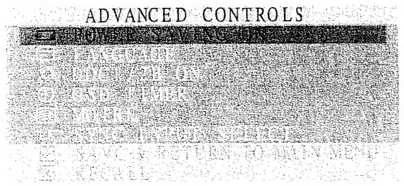
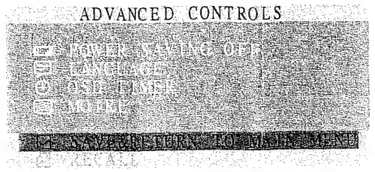
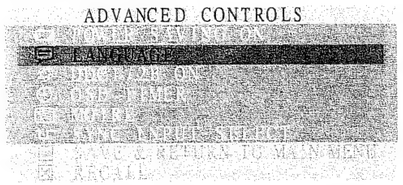
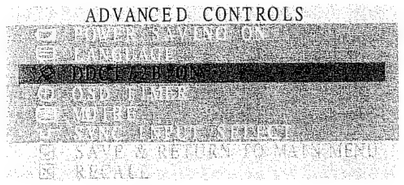
Quick Reference for OSD Adjustment (Continued)

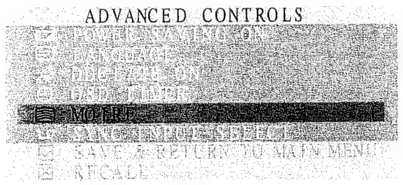


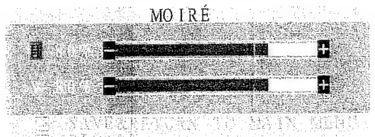


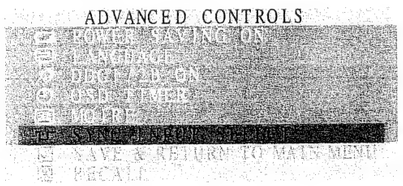


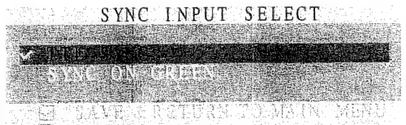


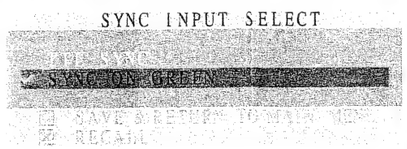


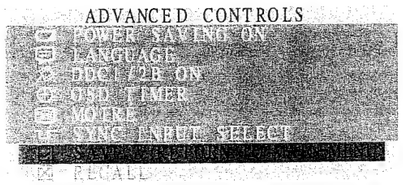


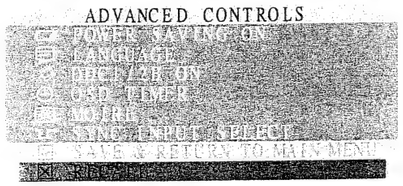


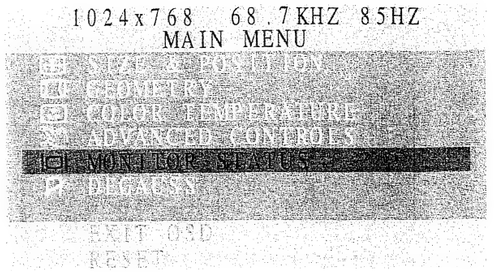


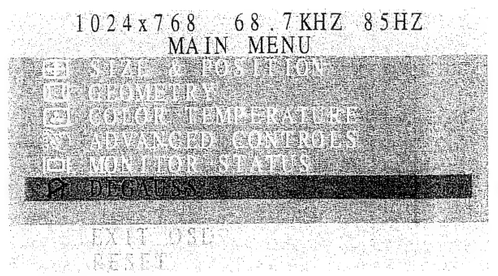


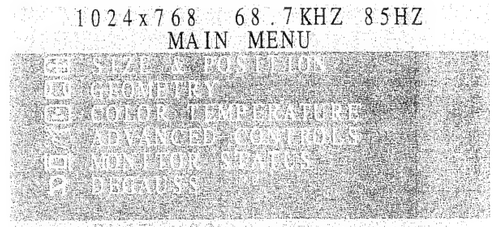


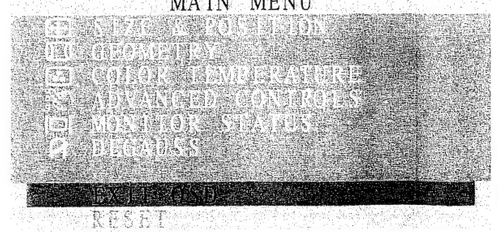


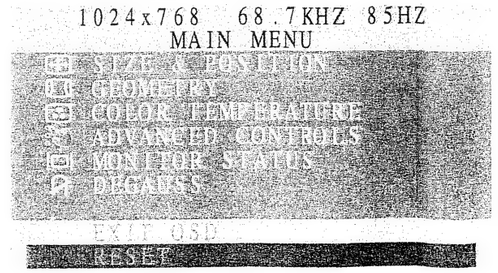






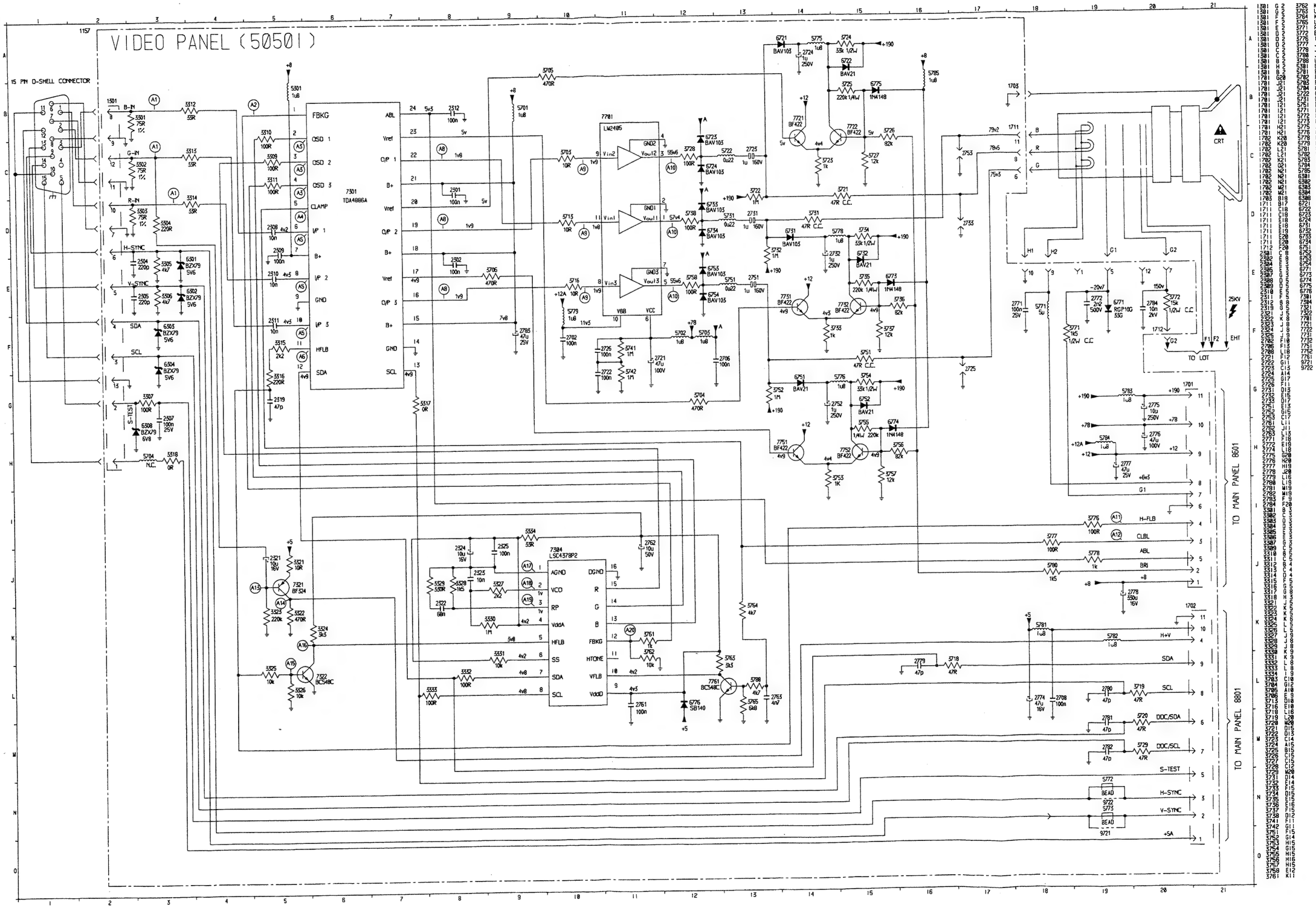




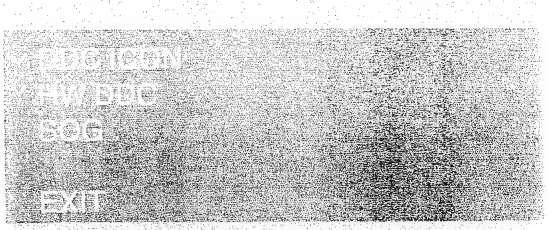


Video Schematic Diagram

A



Remark: (for USER MODE)

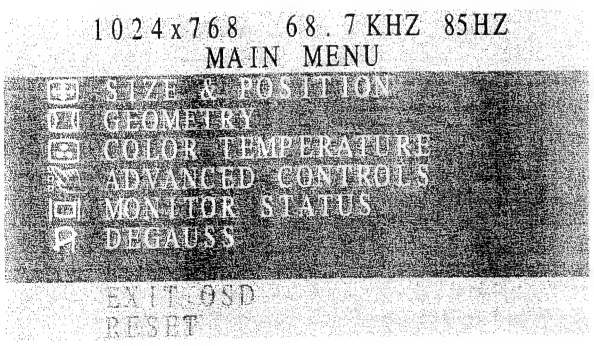


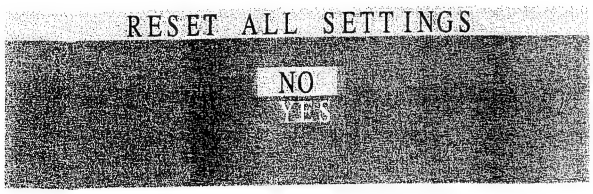
Remark: (for FACTORY MODE)

DDC ICON:
If select " ✓ ", then DDC1/2B ON/OFF shows on the advanced controls.
Default setting is ON.

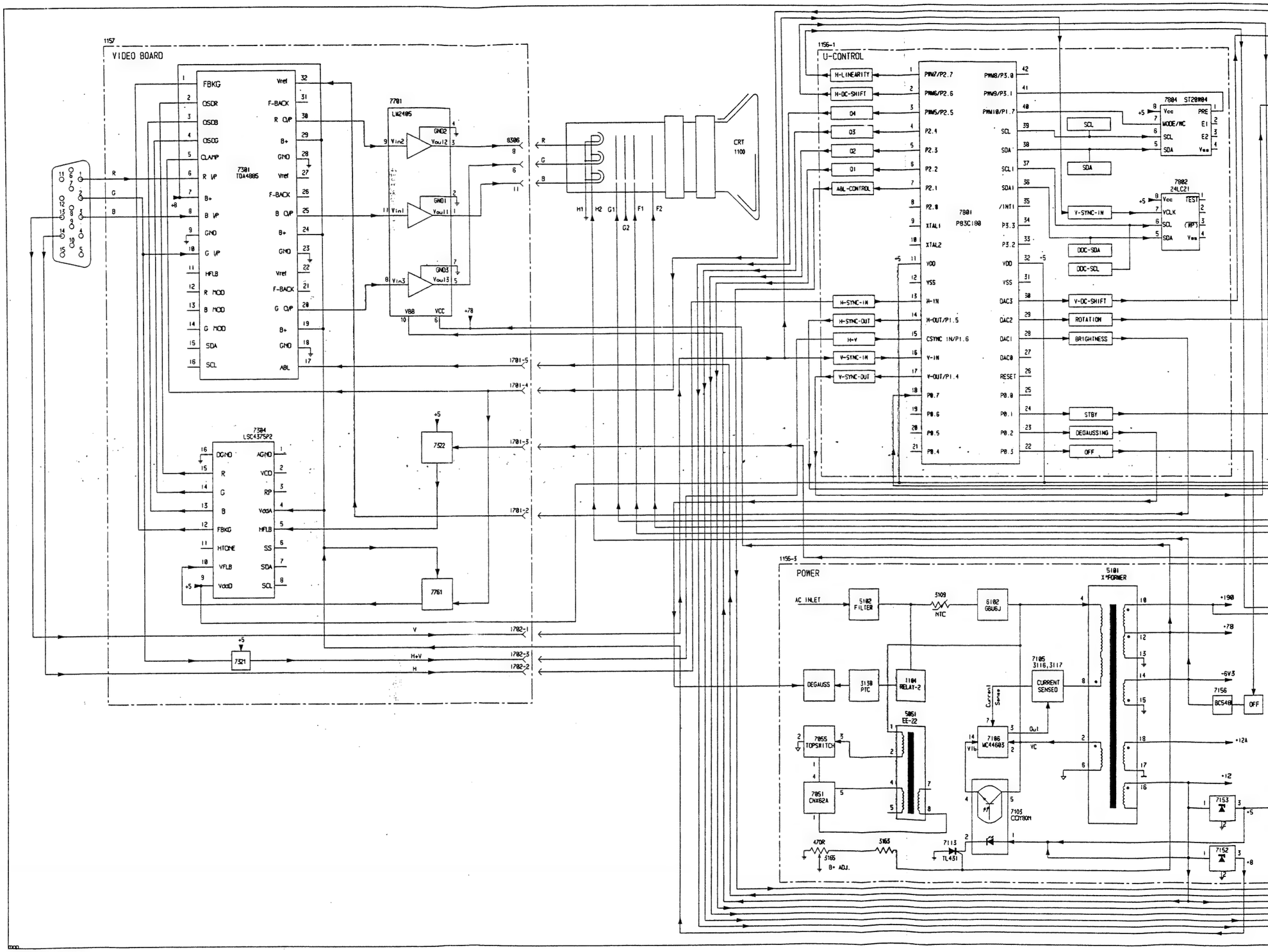
HW DDC (hardware DDC):
Always select " ✓ ".

SOG:
If select " ✓ ", then SYNC INPUT SELECT shows on the advanced controls for "TTL SYNC" or "SYNC ON GREEN" selection.

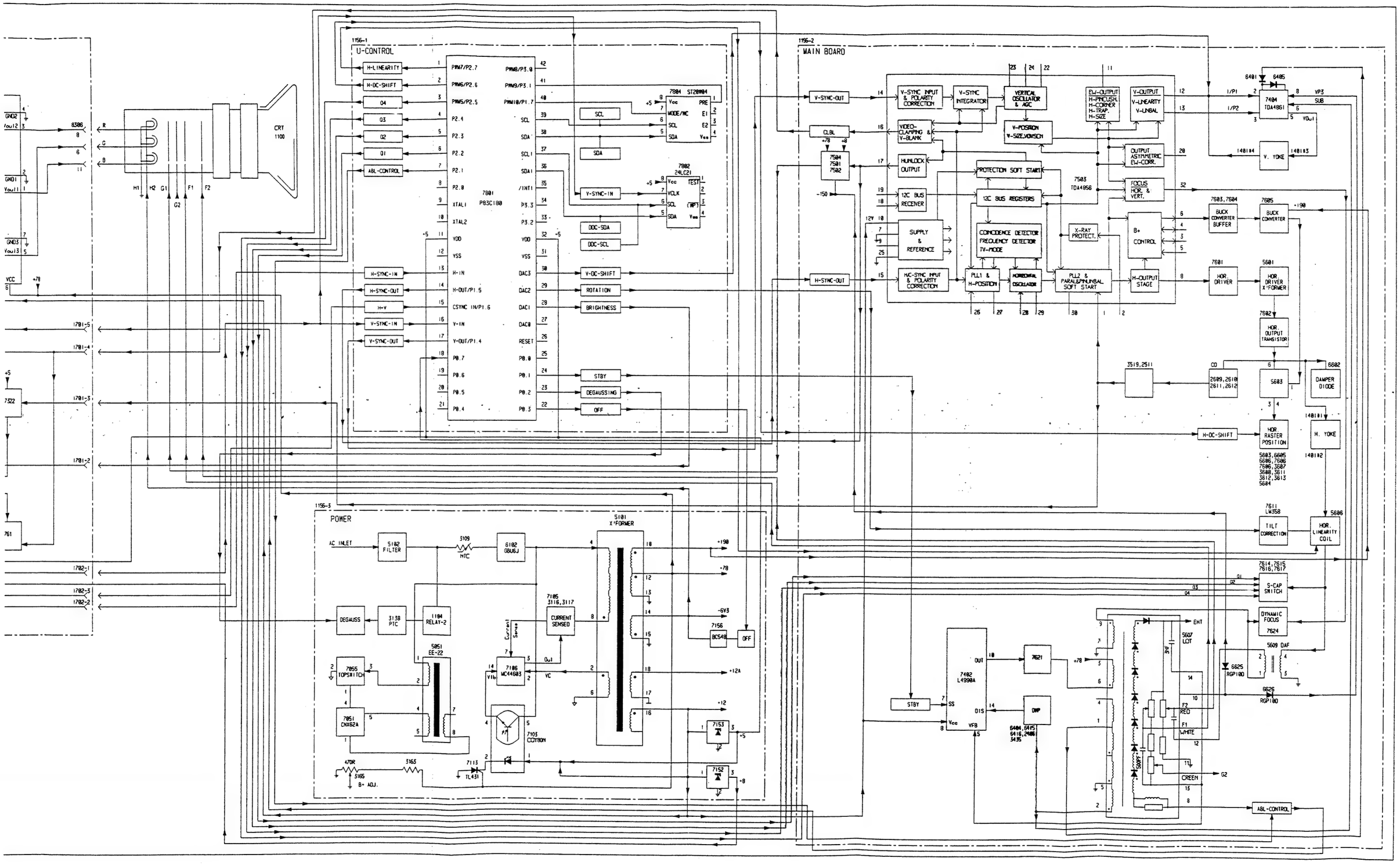




Block Diagram

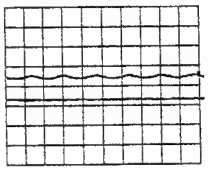


Block Diagram



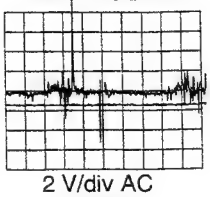
Waveforms for Diagram A

A1 1301-1



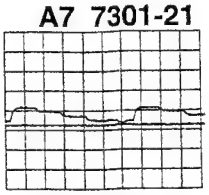
0.5 V/div AC
10 mS/div

A4 7301-5



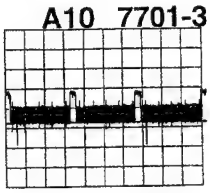
2 V/div AC
5 uS/div

A7 7301-21



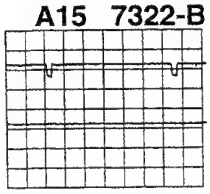
2 V/div AC
5 uS/div

A10 7701-3



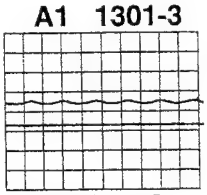
20 V/div AC
5 uS/div

A15 7322-B



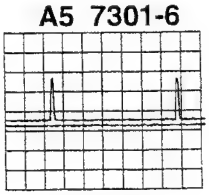
0.2 V/div AC
10 uS/div

A1 1301-3



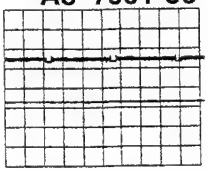
0.5 V/div AC
10 mS/div

A5 7301-6

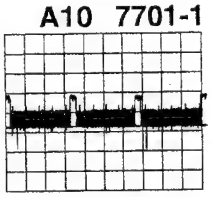


1 V/div AC
5 uS/div

A8 7301-30

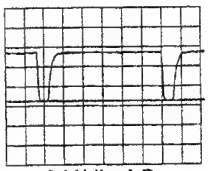


A10 7701-1



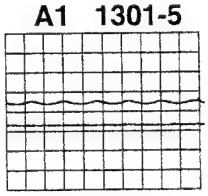
20 V/div AC
5 uS/div

A16 7322-C



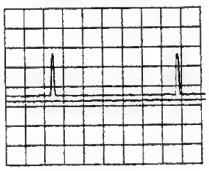
2 V/div AC
5 uS/div

A1 1301-5



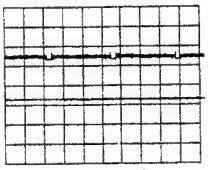
0.5 V/div AC
10 mS/div

A5 7301-8



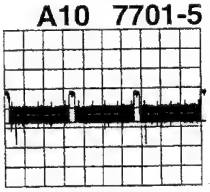
1 V/div AC
5 uS/div

A8 7301-30



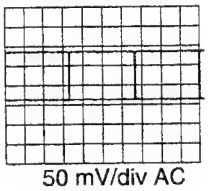
2 V/div AC
5 uS/div

A10 7701-5



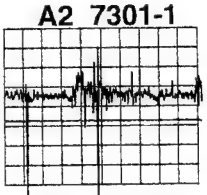
20 V/div AC
5 uS/div

A17 7304-1



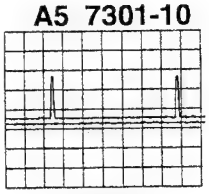
50 mV/div AC
5 uS/div

A2 7301-1



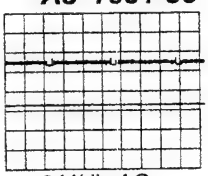
20 m V/div AC
10 uS/div

A5 7301-10



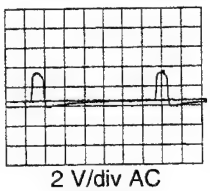
1 V/div AC
5 uS/div

A8 7301-30



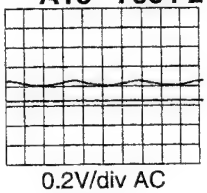
2 V/div AC
5 uS/div

A11 1701-3



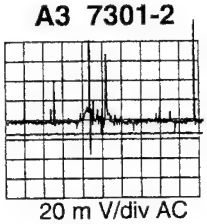
2 V/div AC
10 uS/div

A18 7304-2



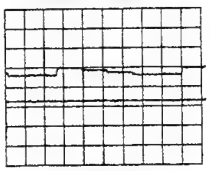
0.2V/div AC
5 uS/div

A3 7301-2



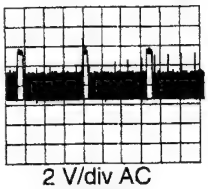
20 m V/div AC
5 uS/div

A6 7301-11



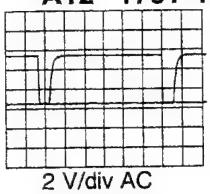
2 V/div AC
5 uS/div

A9 7701-9



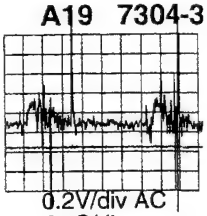
2 V/div AC
5 uS/div

A12 1701-4



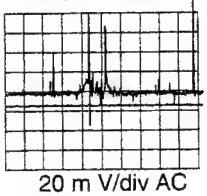
2 V/div AC
10 uS/div

A19 7304-3



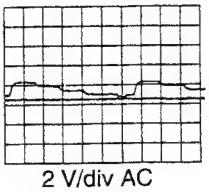
0.2V/div AC
5 uS/div

A3 7301-3



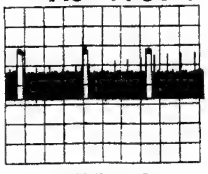
20 m V/div AC
5 uS/div

A7 7301-31



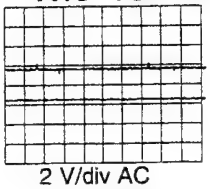
2 V/div AC
5 uS/div

A9 7701-11



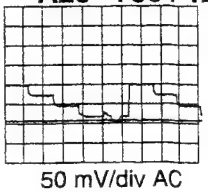
2 V/div AC
5 uS/div

A13 7321-B



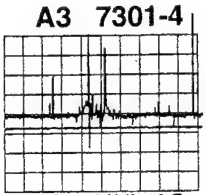
2 V/div AC
0.2 mS/div

A20 7304-12



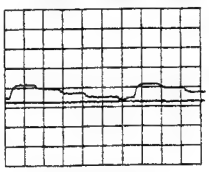
50 mV/div AC
5 uS/div

A3 7301-4



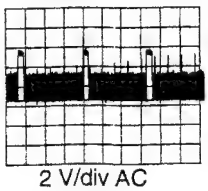
20 m V/div AC
5 uS/div

A7 7301-26



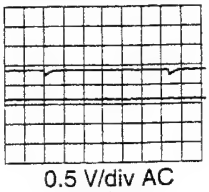
2 V/div AC
5 uS/div

A9 7701-8



2 V/div AC
5 uS/div

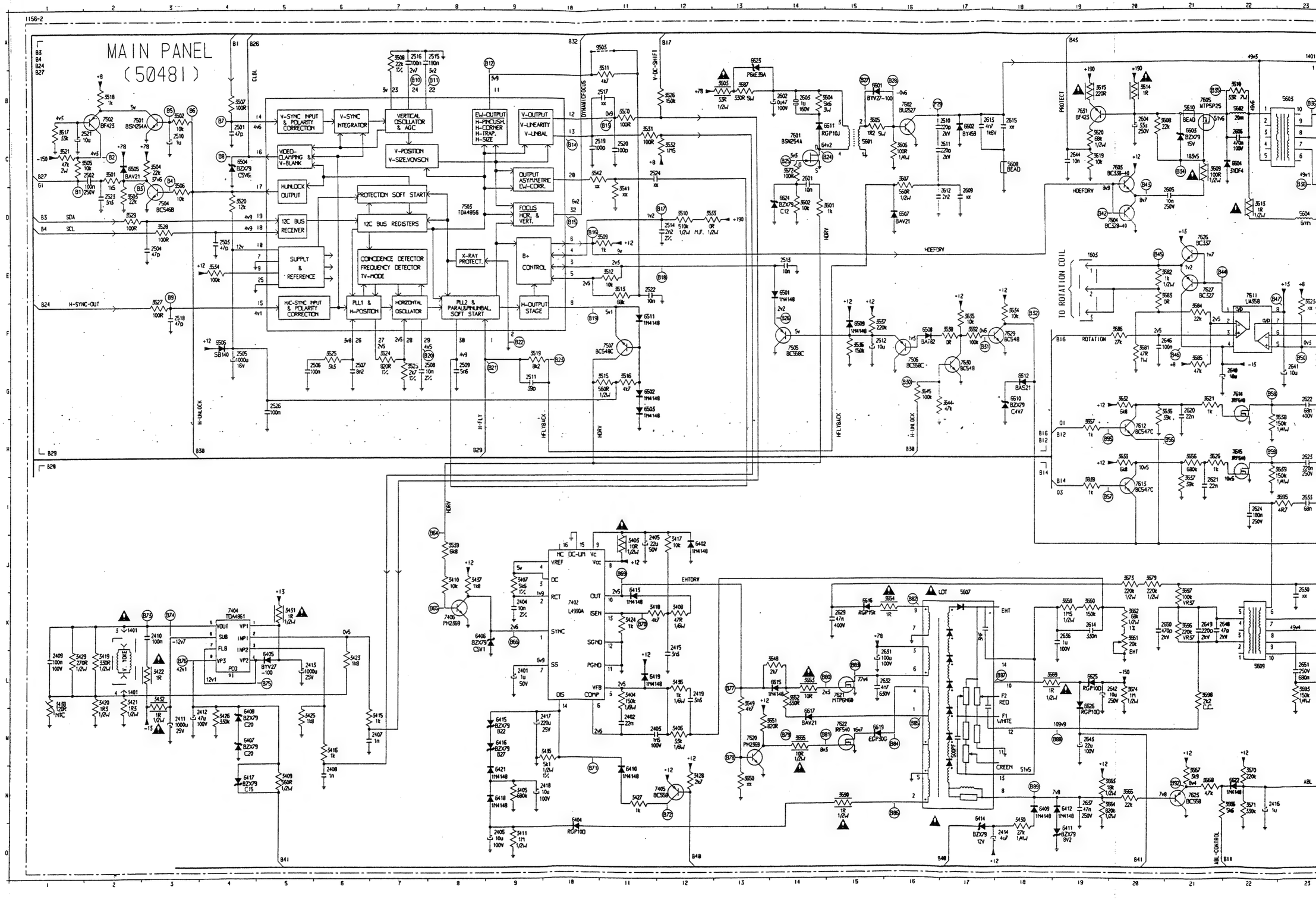
A14 7321-C



0.5 V/div AC
10 uS/div

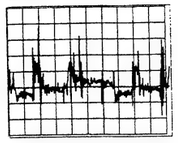
Deflection Schematic Diagram

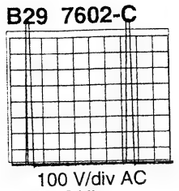
B

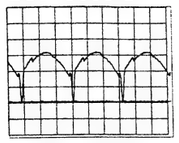

MAIN PANEL
(50481)
V-SYNC INPUT & POLARITY CORRECTION
V-SYNC INTEGRATOR
VERTICAL OSCILLATOR & AGC
V-POSITION V-SIZE,VDVSCN
VIDEO-CLAMPING & V-BLANK
HUNLOCK OUTPUT
I2C BUS RECEIVER
SUPPLY & REFERENCE
H/C-SYNC INPUT & POLARITY CORRECTION
PROTECTION SOFT START
I2C BUS REGISTERS
COINCIDENCE DETECTOR FREQUENCY DETECTOR TV-MODE
PLL1 & H-POSITION
HORIZONTAL OSCILLATOR
PLL2 & PARALLP/UNBAL. SOFT START
X-RAY PROTECT.
H-OUTPUT STAGE
B+ CONTROL
FOCUS HOR. & VERT.
OUTPUT ASYMMETRIC EW-CORR.
EW-OUTPUT H-PINCUSH. H-CORNER H-TRAP. H-SIZE
V-OUTPUT V-LINEARITY V-UNBAL
7505 TDA4856
H-SYNC-OUT
SDA
SCL
H-BLANK
H-FLY
HFLYBACK
HDRV
V-DC-SHIFT
DYNAMIC FOCUS
7404 TDA4851
7405 BC558
7406 PH2369
7407 BC548C
7408 BC548B
7409 BC548B
7410 BC548C
7411 LM358
7412 BC547C
7413 BC547C
7414 BC548C
7415 BC547C
7416 BC548C
7417 BC548C
7418 BC548C
7419 BC548C
7420 BC548C
7421 BC548C
7422 BC548C
7423 BC548C
7424 BC548C
7425 BC548C
7426 BC548C
7427 BC548C
7428 BC548C
7429 BC548C
7430 BC548C
7431 BC548C
7432 BC548C
7433 BC548C
7434 BC548C
7435 BC548C

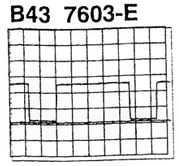
DYNAMIC FOCUS
V-DC-SHIFT
HORV
HFLYBACK
H-UNLOCK
HDEFDRV
PROTECT
TO ROTATION COIL
ROTATION
H-LINEARITY
H-DC-SHIFT
ABL-CONTROL
DYNAMICFOCUS
EHTDRV
TO VIDEO PANEL 1701

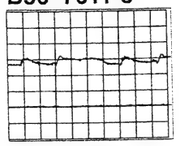
Waveforms for Diagram B and D

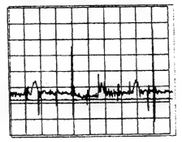
B22 7503-2

50 mV/div AC
5 uS/div

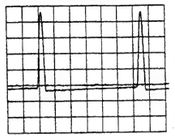
B29 7602-C

100 V/div AC
5 uS/div

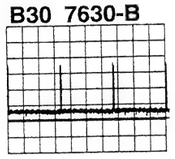
B36 5603-3

20 V/div AC
10 uS/div

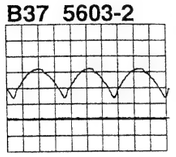
B43 7603-E

5 V/div AC
5 uS/div

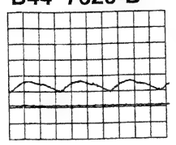
B50 7611-5

0.1 V/div AC
5 uS/div

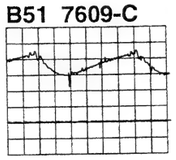
B57 7613-B

0.1 V/div AC
5 uS/div

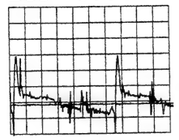
B23 3519

10 V/div AC
5 uS/div

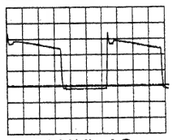
B30 7630-B

0.1 V/div AC
5 mS/div

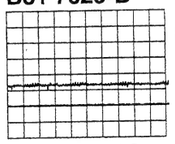
B37 5603-2

20 V/div AC
10 uS/div

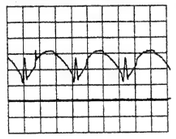
B44 7626-B

2 V/div AC
10 uS/div

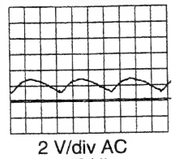
B51 7609-C

0.5 V/div AC
5 uS/div

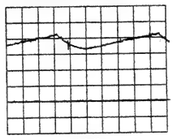
B58 7614-D

0.1 V/div AC
5 uS/div

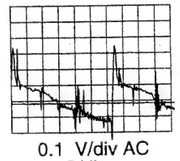
B24 7601-D

50 V/div AC
5 uS/div

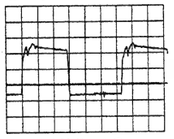
B31 7629-B

0.5 V/div AC
0.2 mS/div

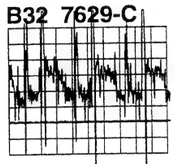
B38 5603-4

20 V/div AC
10 uS/div

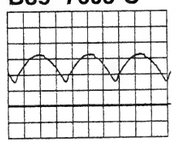
B45 7626-E

2 V/div AC
10 uS/div

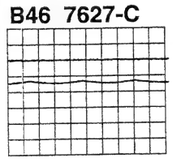
B52 5606-4

10 V/div AC
5 uS/div

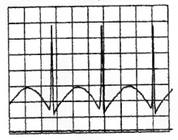
B59 7615-D

0.1 V/div AC
5 uS/div

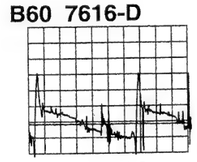
B25 7601-G

1 V/div AC
5 uS/div

B32 7629-C

20 mV/div AC
10 uS/div

B39 7606-C

20 V/div AC
10 uS/div

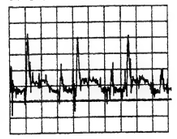
B46 7627-C

10 V/div AC
5 mS/div

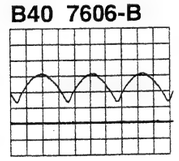
B53 5606-2

20 V/div AC
10 uS/div

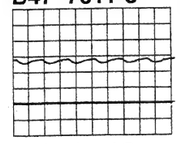
B60 7616-D

0.1 V/div AC
5 uS/div

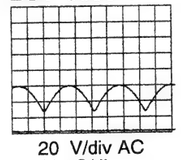
B26 7505-e

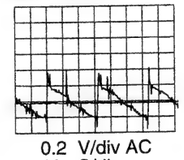
10 mV/div AC
5 uS/div

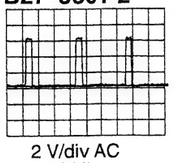
B33 7629-E

50 mV/div AC
10 uS/div

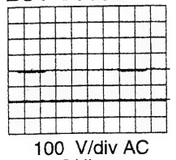
B40 7606-B

20 V/div AC
10 uS/div

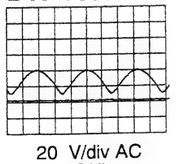
B47 7611-8

5 V/div AC
5 mS/div

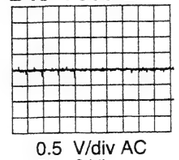
B54 5606-1

20 V/div AC
10 uS/div

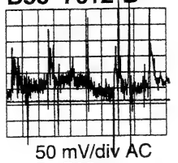
B61 7617-D

0.2 V/div AC
10 uS/div

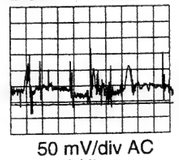
B27 5601-2

2 V/div AC
5 uS/div

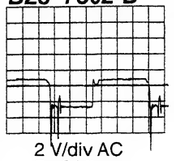
B34 7605-G

100 V/div AC
5 uS/div

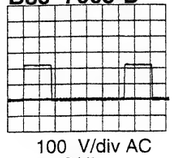
B41 7608-C

20 V/div AC
10 uS/div

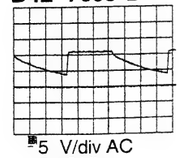
B48 7609-B

0.5 V/div AC
50 uS/div

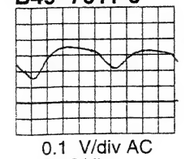
B55 7612-B

50 mV/div AC
5 uS/div

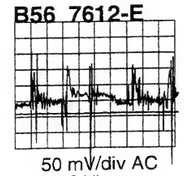
B62 7618-B

50 mV/div AC
5 uS/div

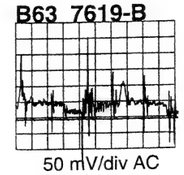
B28 7602-B

2 V/div AC
5 uS/div

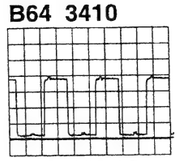
B35 7605-D

100 V/div AC
5 uS/div

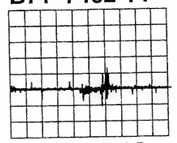
B42 7603-B

5 V/div AC
5 uS/div

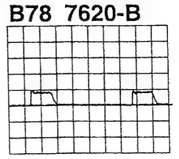
B49 7611-6

0.1 V/div AC
2 uS/div

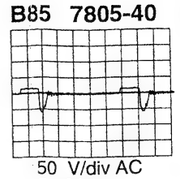
B56 7612-E

50 mV/div AC
5 uS/div

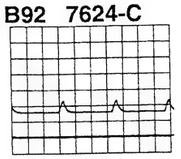
B63 7619-B

50 mV/div AC
5 uS/div

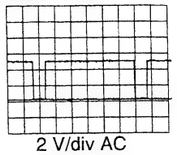
B64 3410

1 V/div AC
10 uS/div

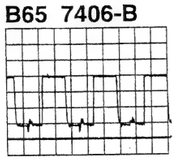
B71 7402-14

0.1 V/div AC
5 uS/div

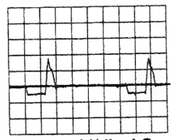
B78 7620-B

1 V/div AC
5 uS/div

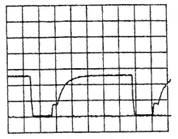
B85 7805-40

50 V/div AC
5 uS/div

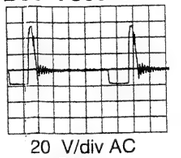
B92 7624-C

5 V/div AC
5 mS/div

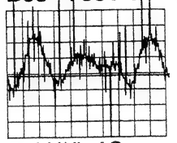
B99 7801-14

2 V/div AC
5 uS/div

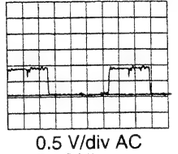
B65 7406-B

0.2 V/div AC
10 uS/div

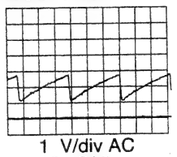
B72 7405-C

10 mV/div AC
5 uS/div

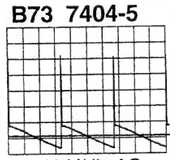
B79 7620-C

5 V/div AC
5 uS/div

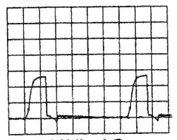
B86 7805-41

20 V/div AC
5 uS/div

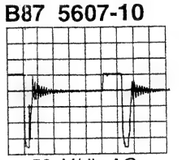
B93 7801-1

2 V/div AC
20 uS/div

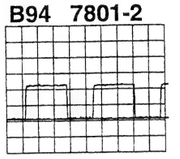
B100 7801-15

0.5 V/div AC
5 uS/div

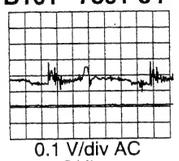
B66 7402-1

1 V/div AC
10 uS/div

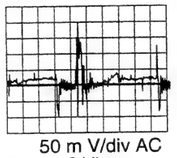
B73 7404-5

10 V/div AC
5 mS/div

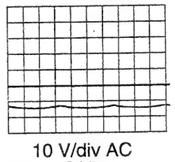
B80 7621-G

5 V/div AC
5 uS/div

B87 5607-10

50 V/div AC
5 uS/div

B94 7801-2

2 V/div AC
20 uS/div

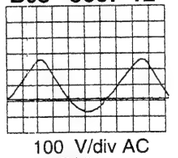
B101 7801-34

0.1 V/div AC
5 uS/div

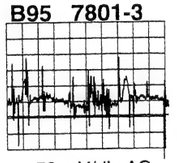
B67 7401-B

50 m V/div AC
5 uS/div

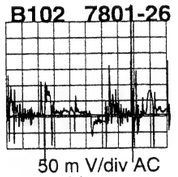
B74 7404-6

10 V/div AC
5 mS/div

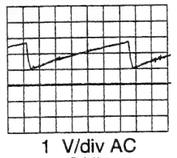
B81 7622-G

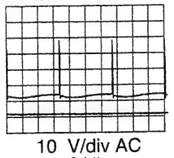
5 V/div AC
5 uS/div

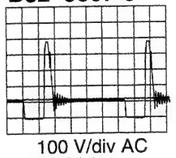
B88 5607-12

100 V/div AC
5 uS/div

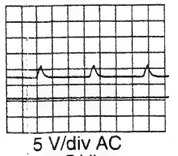
B95 7801-3

50 mV/div AC
5 uS/div

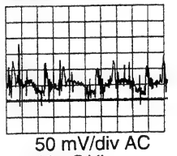
B102 7801-26

50 m V/div AC
5 uS/div

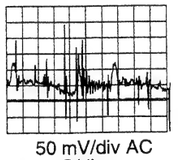
B68 7402-2

1 V/div AC
5 uS/div

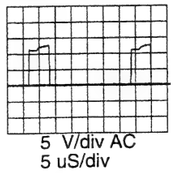
B75 7404-7

10 V/div AC
5 mS/div

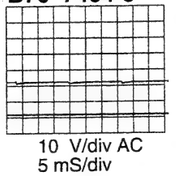
B82 5607-9

100 V/div AC
5 uS/div

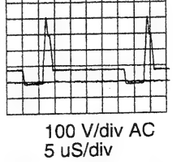
B89 5607-8

5 V/div AC
5 mS/div

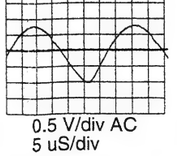
B96 7801-4

50 mV/div AC
10 uS/div

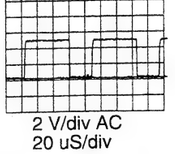
B103 7801-23

50 mV/div AC
5 uS/div

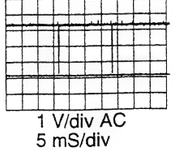
B69 7402-10

5 V/div AC
5 uS/div

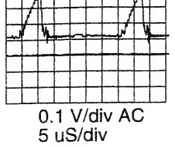
B76 7404-8

10 V/div AC
5 mS/div

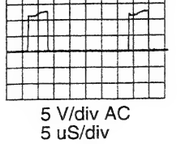
B83 5607-6

100 V/div AC
5 uS/div

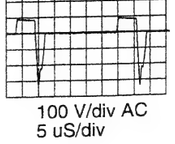
B90 5609-4

0.5 V/div AC
5 uS/div

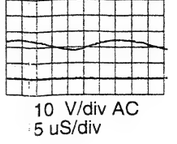
B97 7801-7

2 V/div AC
20 uS/div

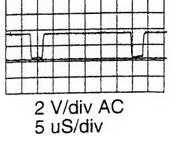
B104 7802-7

1 V/div AC
5 mS/div

B70 7402-13

0.1 V/div AC
5 uS/div

B77 6615-N

5 V/div AC
5 uS/div

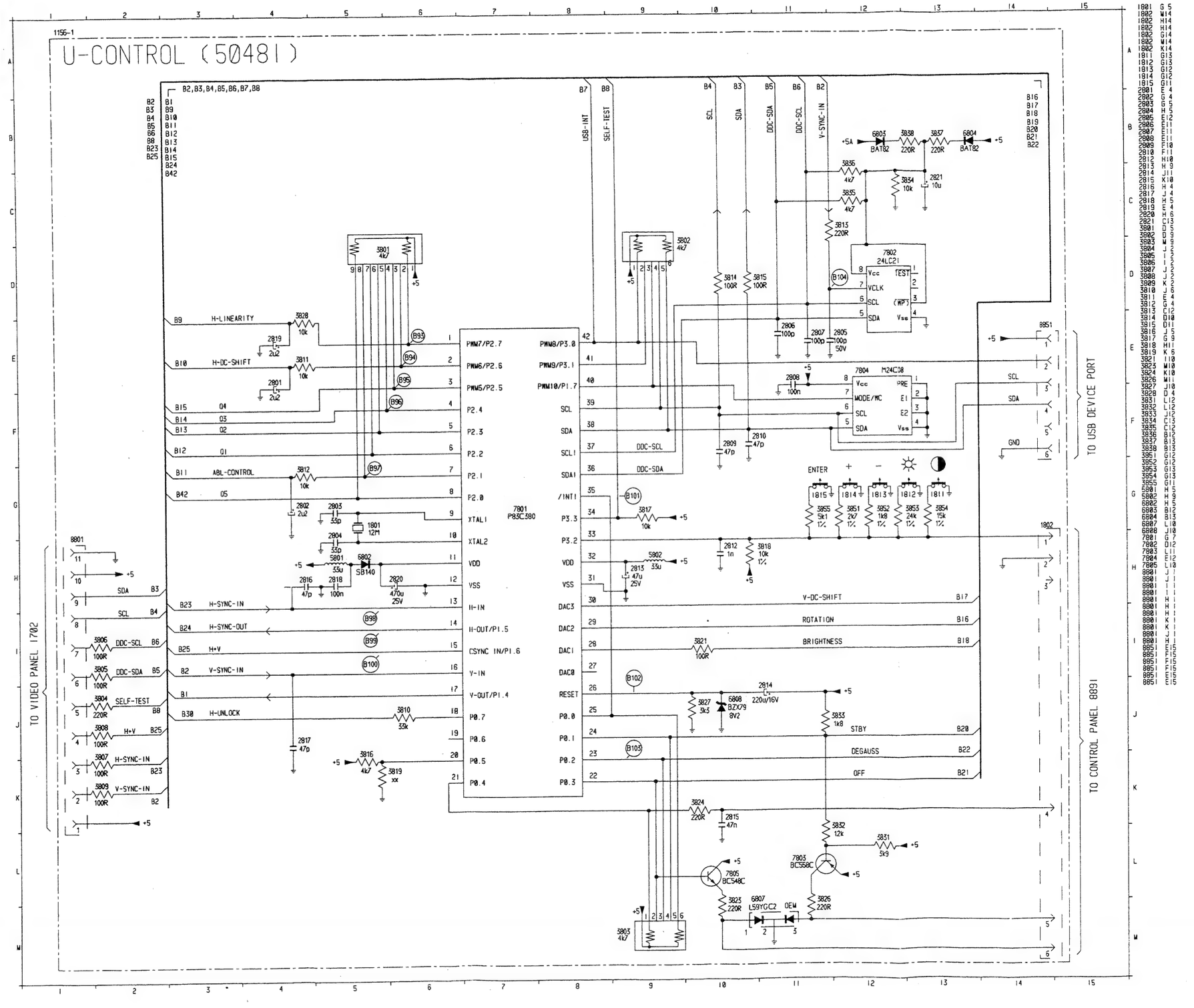
B84 5607-4

100 V/div AC
5 uS/div

B91 5609-4

10 V/div AC
5 uS/div

B98 7801-13

2 V/div AC
5 uS/div

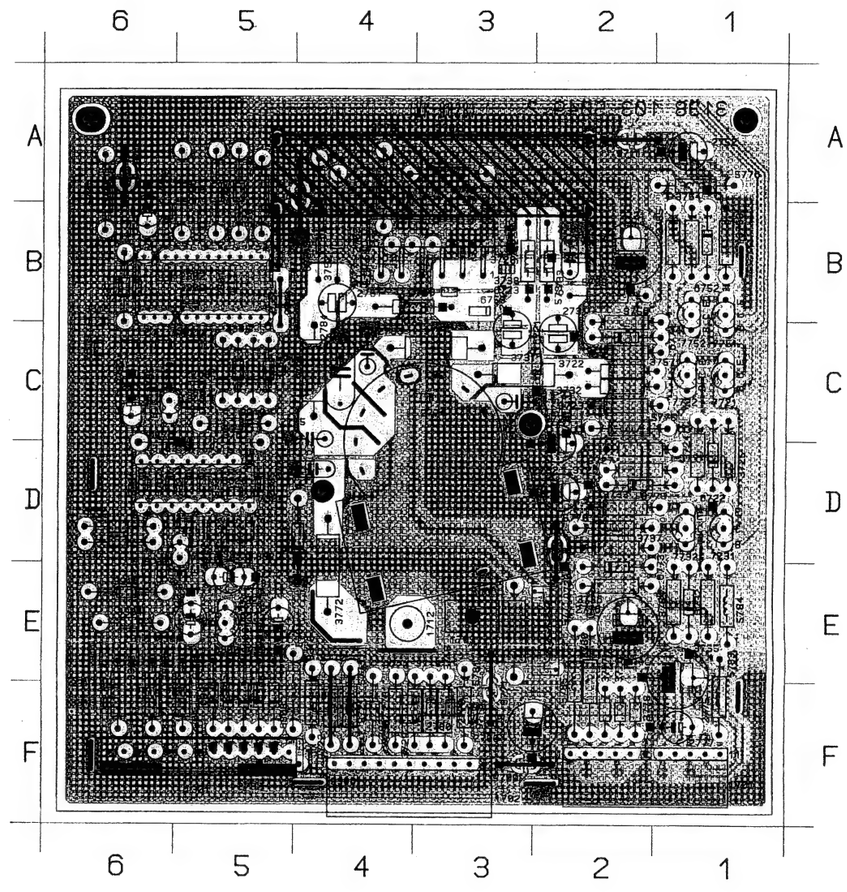
U-Control Schematic Diagram

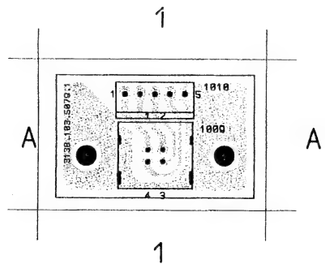
C



Video Panel C.B.A.(A)

5770 A 1	3728 B 3	2780 F 3	1301 F 5
5778 D 2	3729 E 3	2781 F 4	1701 F 2
5779 A 4	3731 C 2	2782 F 5	1702 F 4
5781 E 3	3732 C 1	2783 B 6	1703 E 3
5782 E 4	3733 D 2	2784 C 4	1711 D 3
5783 E 1	3734 E 1	3301 E 5	1712 E 4
5784 E 1	3735 E 1	3302 E 6	2301 B 5
5785 E 2	3736 E 2	3303 E 6	2302 B 6
6301 E 5	3737 D 2	3304 E 6	2304 F 5
6302 E 5	3738 B 3	3305 F 5	2305 F 5
6303 E 5	3741 A 3	3306 F 5	2306 F 4
6304 E 5	3742 A 3	3307 F 4	2307 F 4
6308 E 5	3751 C 4	3309 C 5	2308 E 6
6721 C 3	3752 A 4	3310 C 5	2309 B 5
6722 C 1	3753 B 1	3311 C 5	2310 E 6
6723 B 3	3754 B 1	3312 F 5	2311 E 6
6724 B 3	3755 B 1	3313 F 6	2312 B 6
6731 C 2	3756 C 1	3314 F 6	2316 F 6
6732 E 1	3757 C 2	3315 C 6	2317 F 6
6733 B 2	3758 B 3	3316 E 6	2318 F 6
6734 B 2	3761 C 5	3317 C 6	2319 C 6
6751 B 4	3762 D 6	3318 E 4	2321 E 5
6752 B 1	3763 C 6	3321 E 5	2322 D 5
6753 B 3	3764 C 5	3322 E 5	2323 D 5
6754 B 4	3765 C 6	3323 E 5	2324 E 5
6771 D 4	3767 C 5	3324 D 5	2325 D 5
6773 E 2	3771 E 3	3325 E 6	2702 B 4
6774 C 1	3772 E 4	3326 E 6	2706 B 2
6775 D 1	3776 F 2	3327 D 5	2708 F 3
6776 D 5	3777 F 2	3328 D 5	2721 B 2
7301 B 5	3778 F 2	3329 D 5	2722 B 3
7304 D 5	3780 E 2	3330 D 5	2723 B 3
7321 E 5	4311 E 5	3331 D 5	2724 D 2
7322 D 5	4711 C 5	3332 D 6	2725 C 4
7701 B 3	4712 B 6	3333 D 6	2726 B 3
7721 C 1	4713 C 6	3334 D 5	2731 B 2
7722 C 1	4714 C 5	3703 B 5	2732 D 2
7731 D 1	4715 C 6	3704 B 5	2733 C 4
7732 D 1	4716 B 6	3705 B 5	2751 B 4
7751 B 1	4717 B 4	3706 B 5	2752 A 1
7752 B 1	5301 B 5	3713 B 4	2753 C 3
7761 C 6	5701 B 6	3716 B 6	2761 D 6
9709 F 2	5702 A 3	3718 E 3	2762 C 6
9711 A 2	5703 B 2	3719 E 3	2763 C 5
9712 B 4	5704 F 5	3720 E 4	2771 C 3
9713 E 3	5722 B 3	3721 C 3	2772 D 4
9714 B 5	5731 B 2	3722 C 1	2774 E 5
9715 B 6	5751 B 3	3723 C 2	2775 E 1
9720 D 2	5771 E 2	3724 C 1	2776 E 2
9721 E 4	5772 E 4	3725 C 1	2777 F 1
9722 E 4	5773 E 4	3726 D 1	2778 F 3
	5775 C 2	3727 D 2	2779 F 3





9891 A 3	5894 A 2	3891 A 2	2891 A 2	1891 A 1
9892 A 3	5895 A 2	3892 A 3	2892 A 2	1892 A 3
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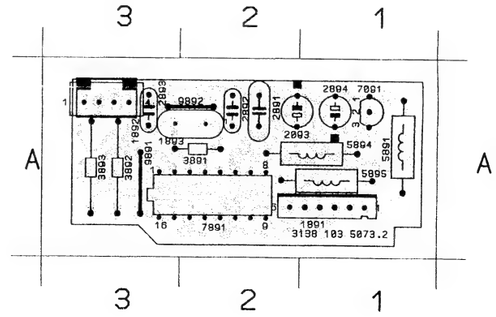
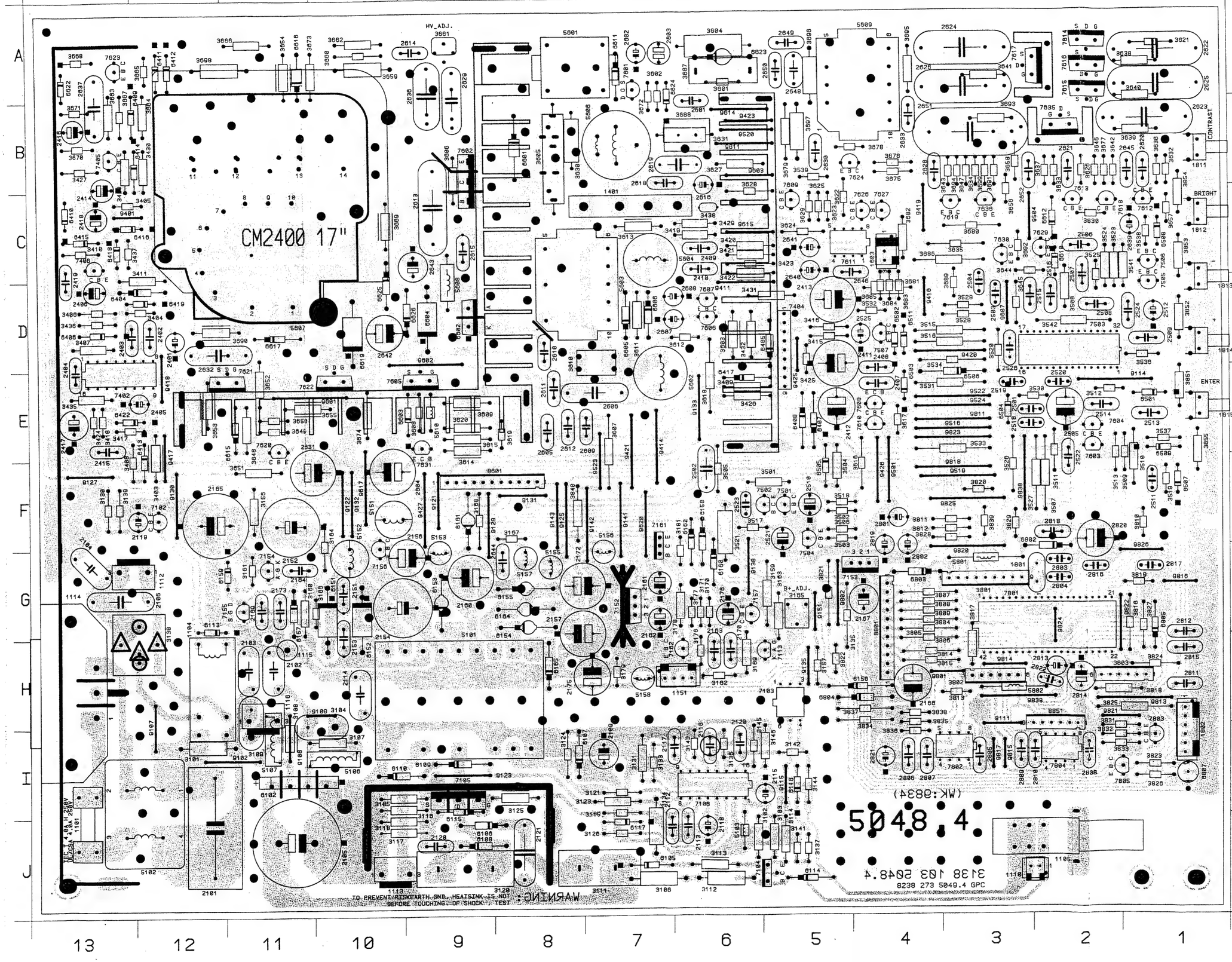
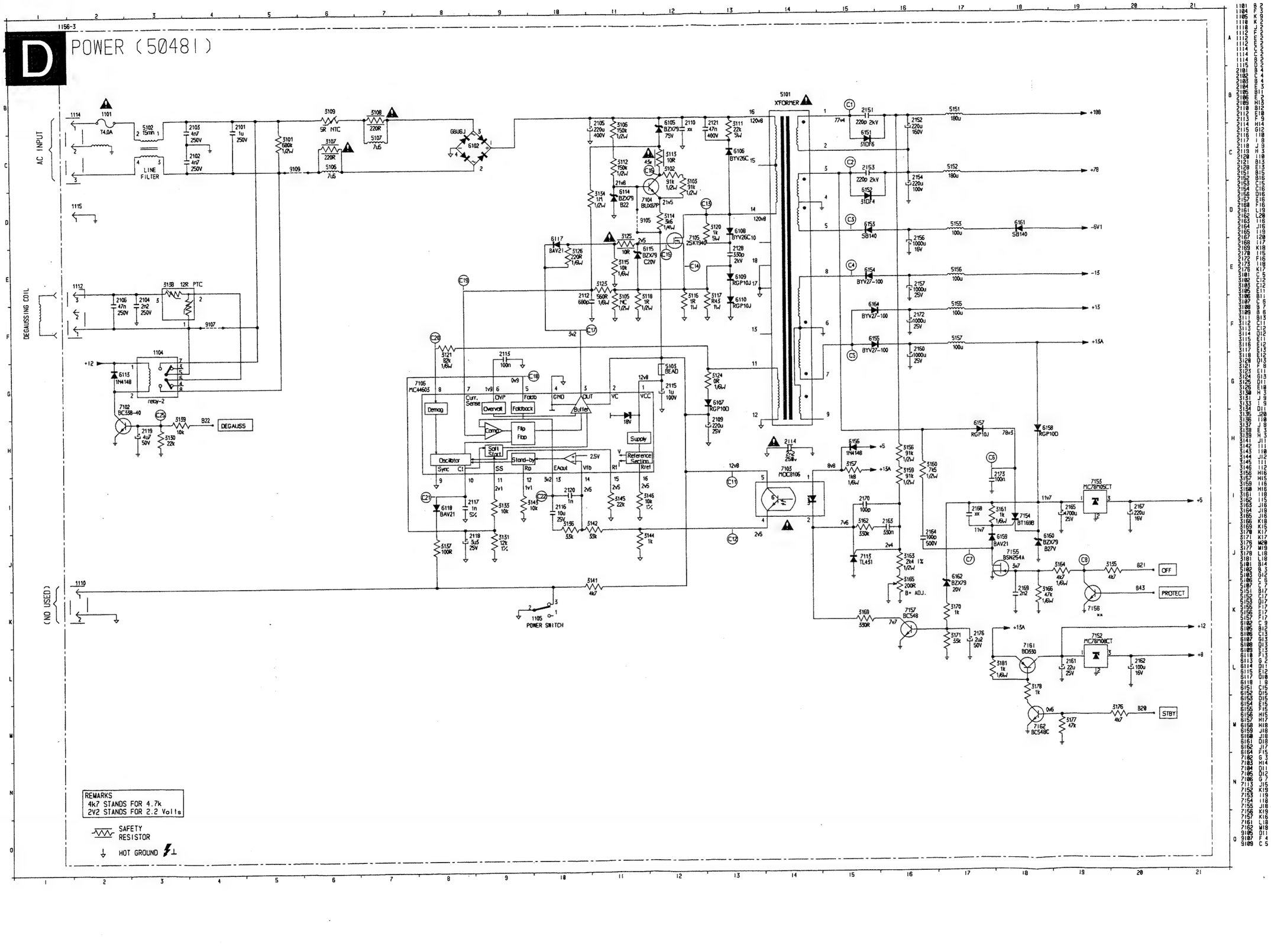


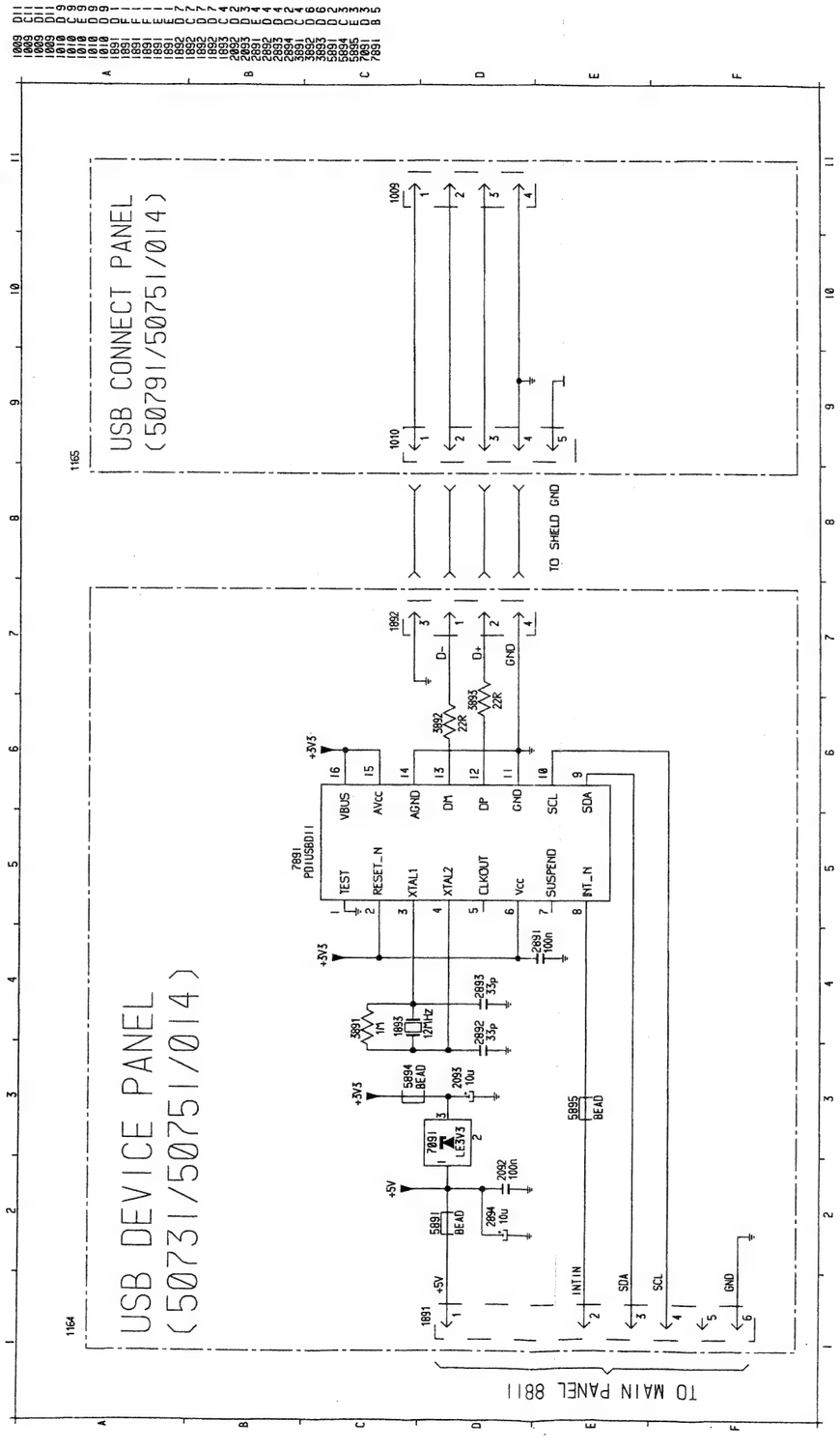

CM2400 17"
HV_ADJ.
CONTRAST
BRIGHT
ENTER
B+_ADJ
WARNING
TO PREVENT RISK EARTH GND. HEATSINK IS NOT
BEFORE TOUCHING OF SHOCK TEST
5048.4
3138 103 5048.4
8238 273 5049.4 GPC

Power Supply Schematic Diagram

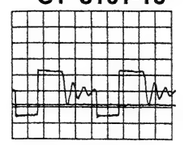


USB connector & Waveforms

E

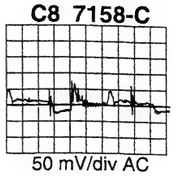


C1 5101-10



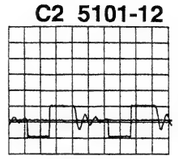
100 V/div AC
5 uS/div

C8 7158-C



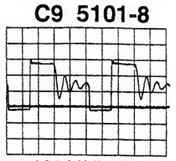
50 mV/div AC
5 uS/div

C2 5101-12



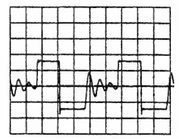
100 V/div AC
5 uS/div

C9 5101-8



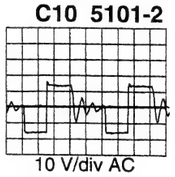
100 V/div AC
5 uS/div

C3 5101-14



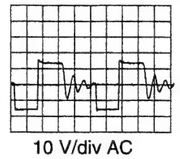
5 V/div AC
5 uS/div

C10 5101-2



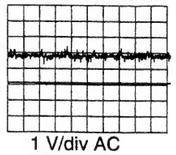
10 V/div AC
5 uS/div

C4 5101-18



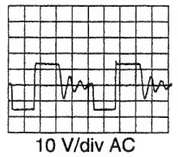
10 V/div AC
5 uS/div

C11 7103-5



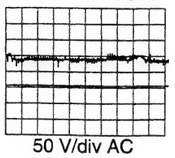
1 V/div AC
10 mS/div

C5 5101-16



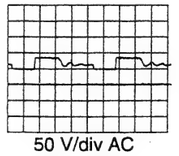
10 V/div AC
5 uS/div

C12 5136-2



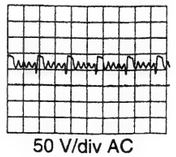
50 V/div AC
5 uS/div

C6 6157-N



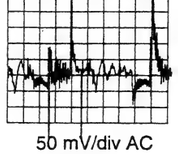
50 V/div AC
5 uS/div

C13 7105-D



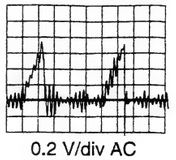
50 V/div AC
5 uS/div

C7 7155-D



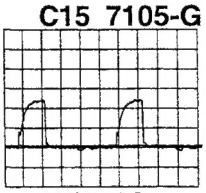
50 mV/div AC
5 uS/div

C14 7105-S



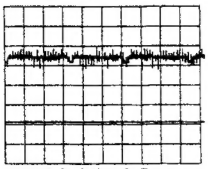
0.2 V/div AC
5 uS/div

C15 7105-G



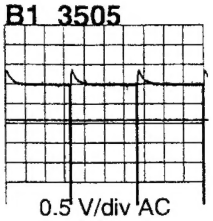
5 V/div AC
5 uS/div

C22 7106-13



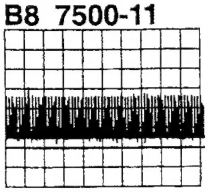
1 V/div AC
5 mS/div

B1 3505



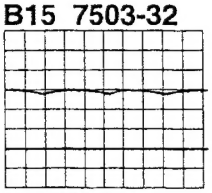
0.5 V/div AC
5 mS/div

B8 7500-11



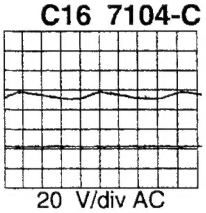
1 V/div AC
5 mS/div

B15 7503-32



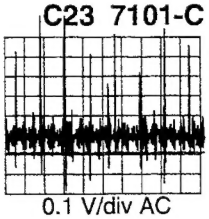
2 V/div AC
5 muS/div

C16 7104-C



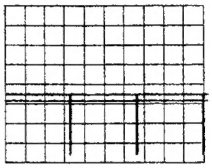
20 V/div AC
2 mS/div

C23 7101-C



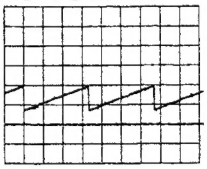
0.1 V/div AC
20 uS/div

B2 7502



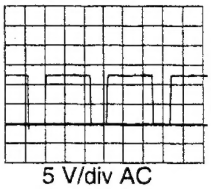
10 V/div AC
5 mS/div

B9 7503-15



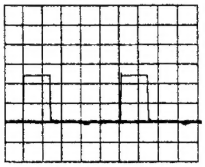
2 V/div AC
5 uS/div

B16 7503-6



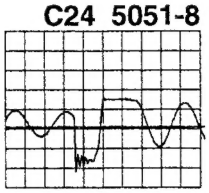
5 V/div AC
10 uS/div

C17 7106-3



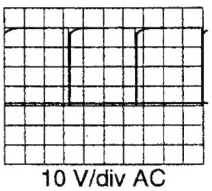
5 V/div AC
5 uS/div

C24 5051-8



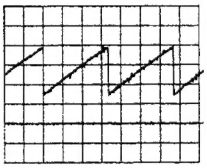
5 V/div AC
0.5 uS/div

B3 6505-P



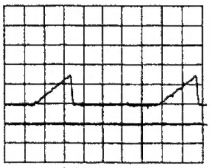
10 V/div AC
5 mS/div

B10 7503-24



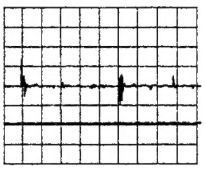
1 V/div AC
5 mS/div

B17 7503-4



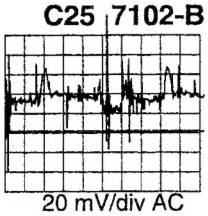
1 V/div AC
5 uS/div

C18 7106-5



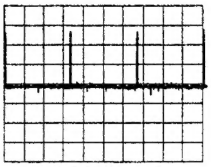
0.5 V/div AC
5 uS/div

C25 7102-B



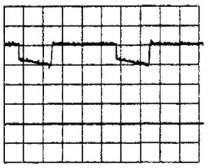
20 mV/div AC
5 uS/div

B4 7504-B



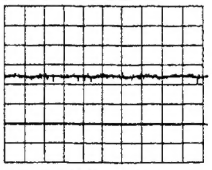
0.2 V/div AC
5 mS/div

B11 7503-22



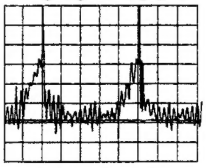
1 V/div AC
10 mS/div

B18 7503-3



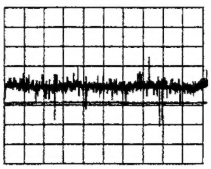
1 V/div AC
10 mS/div

C19 7106-7



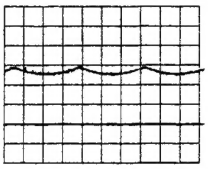
0.2 V/div AC
5 uS/div

B5 7501-B



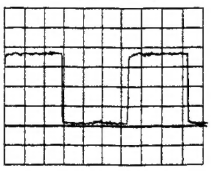
0.2 V/div AC
5 mS/div

B12 7503-11



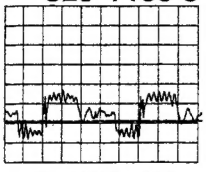
1 V/div AC
5 mS/div

B19 7503-8



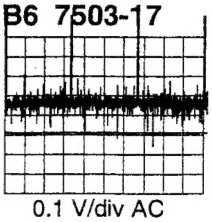
1 V/div AC
5 uS/div

C20 7106-8



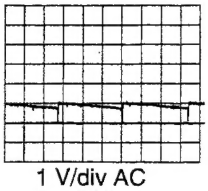
0.5 V/div AC
5 uS/div

B6 7503-17



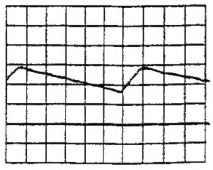
0.1 V/div AC
5 mS/div

B13 7503-12



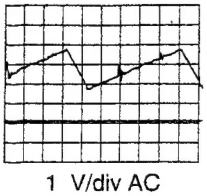
1 V/div AC
5 mS/div

B20 7503-29



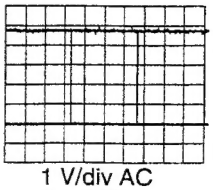
2 V/div AC
5 uS/div

C21 7106-10



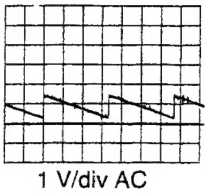
1 V/div AC
5 uS/div

B7 7503-14



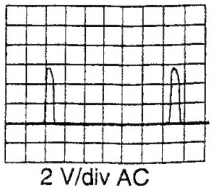
1 V/div AC
5 mS/div

B14 7503-13



1 V/div AC
5 mS/div

B21 7503-1



2 V/div AC
5 uS/div

Main Panel C.B.A. (B,C,D)

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9426	F	4	6624	A	7	3831	I	2	3624	C	5	3163	H	5	2607	D	6	1104	H	12
9427	F	9	6625	D	10	3832	I	1	3625	C	5	3164	G	10	2608	D	7	1105	J	3
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9516	E	3	6803	G	4	3835	H	4	3628	C	6	3167	F	8	2611	E	8	1113	J	10
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9523	F	7	7102	F	12	3839	F	3	3632	B	1	3171	G	6	2615	C	9	1151	H	7
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9601	E	10	7104	J	5	3851	E	1	3634	B	3	3177	G	6	2618	B	6	1803	C	4
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9801	H	4	7157	G	6	5107	H	11	3643	B	3	3408	E	13	2628	B	4	2102	H	11
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9820	G	4	7503	E	2	5502	E	7	3652	D	11	3420	C	5	2640	C	5	2115	I	5
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9825	F	3	7601	A	7	5508	D	9	3657	C	1	3425	E	5	2645	B	1	2120	I	6
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			7622	E	10	6155	G	8	3678	B	5	3510	E	1	2815	H	1	2175	H	7
			7623	A	13	6156	H	4	3679	B	5	3511	F	2	2816	G	2	2178	G	8
			7624	B	5	6157	G	11	3680	C	3	3512	E	2	2817	G	1	2401	D	12
			7626	C	4	6158	G	6	3681	D	4	3513	E	2	2818	F	2	2402	D	12
			7627	C	4	6159	G	11	3682	C	4	3515	D	3	2819	F	4	2403	D	13
			7629	C	2	6160	G	6	3683	D	4	3516	D	3	2820	F	2	2404	E	13
			7630	C	3	6161	F	9	3684	D	4	3517	F	6	2821	I	4	2405	E	12
			7631	E	9	6162	G	6	3685	D	4	3518	F	5	2822	H	2	2406	D	13
			7635	B	2	6164	G	8	3686	C	3	3519	F	1	3101	I	12	2407	E	4
			7636	C	3	6165	H	8	3687	A	6	3520	E	3	3102	J	6	2408	E	4
			7801	G	3	6404	D	12	3688	B	6	3521	G	6	3103	J	5	2409	C	6
			7802	I	3	6405	D	5	3689	D	3	3523	C	2	3104	H	10	2410	C	6
			7803	I	1	6406	D	13	3690	D	12	3524	D	2	3105	I	9	2411	D	5
			7804	I	2	6407	E	5	3691	B	3	3525	C	2	3106	J	6	2412	E	5
			7805	I	1	6408	E	5	3692	C	3	3526	E	3	3107	I	10	2413	D	5
			8601	F	8	6409	B	12	3693	B	3	3527	F	2	3108	H	11	2414	B	13
			8801	G	4	6410	C	13	3694	B	3	3528	D	3	3109	I	11	2415	E	13
			8851	I	2	6411	A	12	3695	A	4	3529	D	3	3111	J	8	2416	B	13
			9102	I	12	6412	A	12	3696	A	5	3530	E	2	3112	J	6	2417	E	13
			9107	I	12	6413	F	12	3697	B	5	3531	E	3	3113	J	6	2418	C	13
			9108	I	11	6414	B	12	3698	A	12	3532	D	4	3114	J	5	2419	C	13
			9109	H	11	6415	C	13	3699	B	3	3533	E	3	3115	I	7	2501	E	3
			9111	I	3	6416	C	13	3801	G	3	3534	D	3	3116	I	10	2502	E	6
			9114	E	1	6417	E	5	3802	H	3	3536	D	1	3117	J	10	2503	D	3
			9115	I	5	6418	C	13	3803	H	1	3537	E	1	3118	J	10	2504	C	3
			9121	F	9	6419	D	13	3804	G	4	3538	C	1	3120	J	9	2505	E	2
			9122	F	10	6422	E	13	3805	G	4	3539	B	5	3121	I	7	2506	C	2
			9123	I	9	6501	E	1	3806	H	4	3541	C	1	3123	I	7	2507	D	2
			9125	F	8	6502	D	4	3807	G	4	3542	D	2	3124	I	8	2508	D	2
			9127	F	13	6503	E	4	3808	G	4	3601	A	6	3125	I	8	2509	D	1
			9129	G	9	6504	E	3	3809	G	4	3602	A	7	3126	J	7	2510	F	5
			9130	F	12	6505	F	5	3810	F	1	3603	D	6	3130	F	13	2511	F	1
			9131	F	8	6506	E	4	3811	F	4	3604	A	6	3131	I	7	2512	D	1
			9132	F	10	6507	F	1	3812	F	4	3605	B	8	3133	I	7	2513	E	1
			9133	E	6	6508	C	1	3813	H	4	3606	B	9	3134	I	7	2514	E	2
			9135	H	5	6509	E	1	3814	H	3	3607	F	7	3135	G	5	2515	D	3
			9138	G	6	6511	D	4	3815	H	3	3608	E	9	3136	I	6	2516	D	2
			9141	G	7	6601	B	8	3816	H	1	3609	E	9	3137	J	5	2518	E	3
			9142	G	7	6602	D	9	3817	G	3	3610	D	8	3138	H	12	2519	E	3
			9143	F	8	6603	E	9	3818	H	2	3611	D	7	3139	F	13	2520	E	2
			9151	G	5	6604	D	9	3819	G	1	3612	D	6	3141	J	5	2521	F	5
			9401	C	12	6605	D	7	3820	F	3	3613	C	7	3142	I	5	2522	F	2
			9411	D	5	6606	D	7	3821	G	5	3614	E	9	3143	I	8	2523	F	6
			9414	F	7	6610	D	2	3822	H	5	3615	E	9	3144	I	5	2524	D	1
			9416	D	4	6611	A	7	3823	I	1	3616	E	4	3145	I	6	2525	D	4
			9417	F	12	6612	C	2	3824	H	1	3617	E	4	3146	I	5	2526	D	3
			9418	D	12	6615	E	11	3825	H	1	3618	D	6	3156	F	11	2801	B	6
			9419	B	4	6616	A	11	3826	I	1	3619	E	8	3157	H	5	2802	A	7
			9420	D	3	6617	D	11	3827	G	1	3620	E	9	3159	G	5	2803	A	7
			9421	E	7	6619	D	10	3828	F	4	3621	A	1	3160	G	11	2804	F	10
			9423	B	5	6622	A	13	3829	F	3	3622	B	5	3161	G	11	2805	E	8

0. Warning

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the unit via a wrist wrap with resistance. Keep components and tools also at the same potential !

1. Servicing of SMDs (Surface Mounted Devices)

1.1 General cautions on handling and storage
- Oxidation on the terminals of SMDs results in poor soldering. Do not handle SMDs with bare hands.
- Avoid using storage places that are sensitive to oxidation such as places with sulphur or chlorine gas, direct sunlight, high temperatures or a high degree of humidity. The capacitance or resistance value of the SMDs may be affected by this.
- Rough handling of circuit boards containing SMDs may cause damage to the components as well as the circuit boards. Circuit boards containing SMDs should never be bent or flexed. Different circuit board materials expand and contract at different rates when heated or cooled and the components and/or solder connections may be damaged due to the stress. Never rub or scrape chip components as this may cause the value of the component to change. Similarly, do not slide the circuit board across any surface.

1.2 Removal of SMDs
- Heat the solder (for 2-3 seconds) at each terminal of the chip. By means of litz wire and a slight horizontal force, small components can be removed with the soldering iron. They can also be removed with a solder sucker (see Fig. 1A)

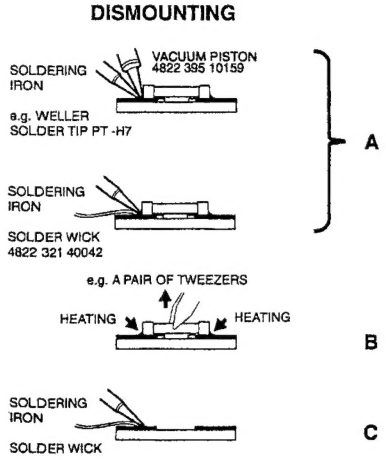


Fig.1

- While holding the SMD with a pair of tweezers, take it off gently using the soldering iron's heat applied to each terminal (see Fig. 1 B).
- Remove the excess solder on the solder lands by means of litz wire or a solder sucker (see Fig. 1C).

1.3 Caution on removal
- When handling the soldering.iron. use suitable pressure and be careful.
- When removing the chip, do not use undue force with the pair of tweezers.
- The soldering iron to be used (approx. 30 W) should preferably be equipped with a thermal control (soldering temperature: 225 to 250 °C).
- The chip, once removed, must never be reused.

1.4 Attachment of SMDs
- Locate the SMD on the solder lands by means of tweezers and solder the component on one side. Ensure that the component is positioned correctly on the solder lands (see Fig. 2A).
- Next complete the soldering of the terminals of the component (see Fig. 2B).

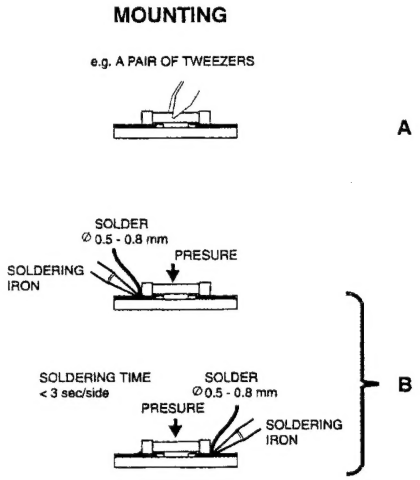


Fig. 2

2. Caution when attaching SMDs

- When soldering the SMD terminals, do not touch them directly with the soldering iron. The soldering should be done as quickly as possible, care must be taken to avoid damage to the terminals of the SMDs themselves.
- Keep the SMD's body in contact with the printed board when soldering.
- The soldering iron to be used (approx. 30 W) should preferably be equipped with a thermal control (soldering temperature: 225 to 250 °C).
- Soldering should not be done outside the solder land.
- Soldering flux (of rosin) may be used, but should not be acidic.
- After soldering, let the SMD cool down gradually at room temperature.
- The quantity of solder must be proportional to the size of the solder land. If the quantity is too great, the SMD might crack or the solder lands might be torn loose from the printed board (see Fig. 3).

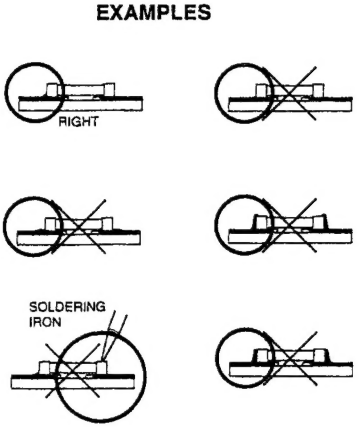
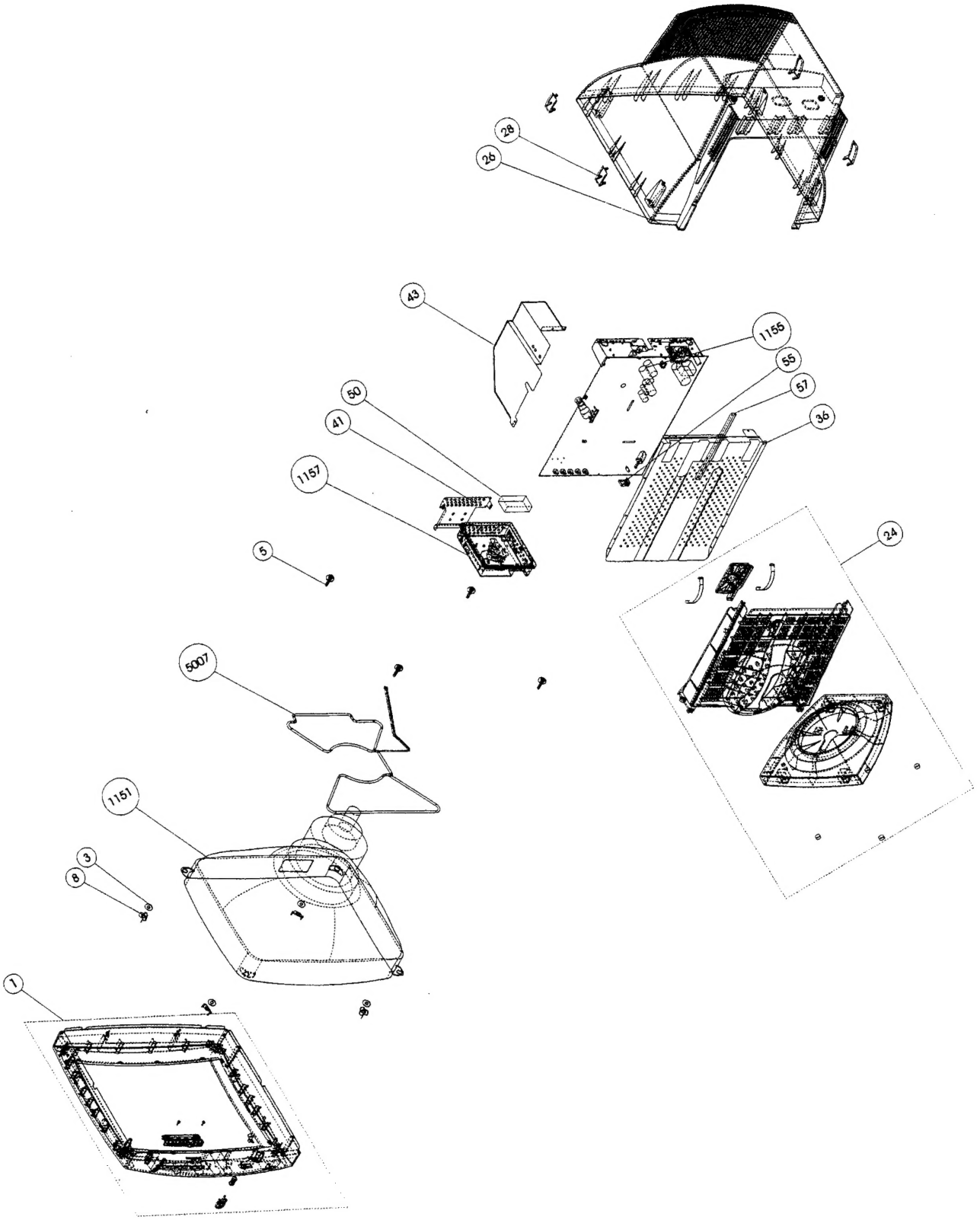


Fig. 3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